# Journal of the Association of American Medical Colleges

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CONTENTS


| | PAGE |
|---|---|
| A Study of Several "Experiments" in Medical Education. *C. Canby Robinson* | 129 |
| Correlation Clinic in the Freshman and Sophomore Years. *William A. O'Brien* | 145 |
| Take Them Earlier and Keep Them Longer. *William D. Reid* | 149 |
| Editorials | 158 |
| News Items—College | 161 |
| " " —General | 167 |
| " " —Personals | 173 |
| Deaths | 176 |
| Abstracts | 177 |



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*Continued on Third Cover Page*

JOURNAL
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# A Study of Several "Experiments" in Medical Education*

G. Canby Robinson, M. D.
Director of the New York Hospital-Cornell Medical College Association.

The word "Experiments" is used in quotation marks because it is intended to denote certain departures from the traditional and standard curricula in force in most medical schools. This explanation is made with the idea of forestalling objections that might be raised by the schools discussed, as, perhaps, these schools do not regard their educational policies as being experimental. In one instance, however, that of Yale, the President of the University, in his last annual report, speaks of the new educational procedures in the medical school as "experimental in purpose," and the methods of teaching which are discussed in this paper, have been viewed as experiments in destandardization by the Curriculum Committee of the Cornell University Medical College.

A study of several medical schools has been undertaken to serve as a control and as a guide for the future medical educational policies of Cornell, and to us these newer procedures have served as experiments. We have endeavored to learn how these experiments were performed and what deductions may be drawn from them. It is a brief account of this study and of some conclusions reached by the Curriculum Committee that I propose to present in this paper.

## The Schools Studied and Plan of Study

Four schools were studied, because their plans of education presented problems in which we were especially interested. These four schools are: University of Chicago, Harvard University, Johns Hopkins University and Yale University. Each school was assigned to a member of our Curriculum Committee and in order to give uniformity to the study the following questions were proposed.

1. To what extent does the school under consideration conduct its teaching in conformity with the usual practice in university graduate schools?

*Read at the Forty-first Annual Meeting of the Association held in Denver, Colo., Oct. 14-16, 1930.

2. To what extent is the curriculum elastic, and what, in general, is the relation of required and elective work?

3. What is the relation of the study of the medical sciences to that of clinical medicine?

4. What are the provisions for student research, and how is elective time arranged?

5. What methods of examination are used? Are comprehensive examinations given, and how?

6. What special features of the curriculum should be given consideration in our own developments?

These questions indicate the problems in mind during the course of this study. The method of approach was to review the last annual announcement, to visit the school, to discuss the various points of interest with members of the faculty and also, when possible, with students. Although no doubt errors and misunderstandings are contained in the reports made or in the recording of these reports, a brief account of some of the points noted regarding each school is given here, with the idea of presenting certain forward movements in our educational methods.

### The University of Chicago Plan

The two schools that are physically integral parts of university graduate schools are Chicago and Yale. This desirable relationship is clearly reflected in the organization of teaching and in the general approach to medical education, which is distinctly that of the so-called graduate school of the university.

In Chicago, a unique situation exists. Clinical studies can be pursued in the Ogden Graduate School of Science or in the Rush Medical College. It is only the medical school which is part of the graduate school that was studied.

The medical curriculum at Chicago is made up by the student's selection of courses offered by the various departments of the Graduate School, which have recently been extended to include medicine, surgery and other clinical fields, all of which are not yet developed as part of the Graduate School. The year is divided into four quarters, and medical students are advised to begin with the spring or autumn quarter.

Requirements for admission are given in only general terms, other than a bachelor's degree, although rather extensive suggestions regarding college preparation for medicine are given. Courses are offered in the medical subjects which may be taken toward the A.B., the A.M., the Ph.D., and the M.D. degree.

The various departments are organized as true university depart-

ments, often with several professors, and with a relatively large number of fellowships. The departments are arranged in several groups, and a minimum number of majors in each group are required for candidates for the M.D. degree. Each candidate must satisfy the special requirements of at least one department in excess of the minimum and leading to the preparation of an acceptable thesis. Examinations may be taken at any time when offered, but the examinations in the anatomy and physiology groups must be passed before beginning the second eighteen majors of work for the M.D. degree. Thirty-six majors are required for this degree.

There are no schedules of work for medical students except those published by the separate groups of departments. The required courses offered by each department are arranged so that a student can take them in the usual sequence without conflict.

The medical school of the University of Chicago is so organized that its teaching is conducted in conformity with the usual practice in university graduate schools. The curriculum may be selected by the student with a minimum amount of restrictions, and the time utilized to complete the requirements for the M.D. degree may be varied considerably above the minimum of twelve full quarters, the last three quarters of which must have been done in the University of Chicago.

Group examinations are given, and can be taken at various times, and the examination in hygiene, bacteriology and pathology can be taken any time after two and one-half years of medical study have been completed.

It is the elective freedom, principles of true university organization, the quarter system, and the special requirements in a single department leading to an acceptable thesis that are of especial interest.

In discussing the practical application of student freedom and opportunity for diversification of the course by student election with members of the Chicago faculty, it is evident that the time required to complete the prescribed courses left little time for elective work unless the student was willing to extend the time usually necessary to meet the requirements for the M.D. degree. This is especially true in the first half of the course of study, and results in the students arranging their course of study along conventional lines of the usual curriculum. The relatively large amount of required work tends to restrict student freedom and elective opportunities.

### The Yale Medical School Plan

The Yale Medical School is conducted in conformity with the usual practice in university graduate schools, and the graduate students from

various departments of the university work together with the medical students.

No set curriculum is prescribed and a student may arrange his courses so that he has a considerable amount of free time for electives, but the required work in the medical sciences is so large that little free time is left if the required courses are completed in two years, over 2,000 hours being required.

The students are required to pursue the medical sciences sufficiently so that they can pass a comprehensive examination given by the faculty of the clinical departments before they are permitted to take courses in these departments.

The sudents are required to write a thesis on which they may work during their entire length of residence, but for which they have more time during the years when clinical subjects are being studied. Two and a half trimesters of free time are available during the six trimesters which are required for clinical studies.

Comprehensive examinations are held at the end of the clinical studies, as well as at the end of the preclinical studies, somewhat similar to the plan long practiced in the German universities.

In commenting on the innovations in medical education at Yale, the president of the university has recently stated that "the method of promotion into, rather than out of courses, the wide elective privileges, the reduction in the hours of required fundamentals (often so taught elsewhere as to produce not mastery of a few fundamentals, but superficial knowledge of a wide range of material), highly individualized methods of instruction, early introduction to the dispensary and the clinics, opportunity midway of the course, if the student desires, to branch off into scholarly scientific research, with a Ph.D. as its academic mark, rather than to go on to the M.D. and the profession of medicine in its ordinary form—these are simply examples of which many others could be cited, and of which the conspicuous part to be played by the School of Medicine in the Institute of Human Relations is possibly the most significant. All these procedures rest on well thought out educational ideas. They are plastic and experimental in purpose, but they have already justified themselves *en masse* by completely rejuvenating the spirit of the establishment."

At Yale, a fundamental idea is beginning to show its effect on the policies and organization of the Medical School, namely the relation of medicine to the social sciences. This idea has been set forth by Dean Winternitz in his last published report to the President and Fellows of the University in which he says: "And now it may be predicted that

just as the artificial line of cleavage between biology and medicine becomes less and less pronounced in the educational program, so will the affiliation grow between these subjects and the social sciences. For in their turn this great group of disciplines—the social sciences—must play an ever increasing rôle in the training of physicians, lawyers, ministers, and, indeed, of all who have to do with men and the many complex conditions governing their lives and happiness."

This phase of the Yale experiment will surely be watched by all interested in medical education, and it will doubtless be of definite influence in our future thinking on this subject.

### The Harvard Medical School Plan

At Harvard and at Johns Hopkins a prescribed curriculum is set forth. In both schools an attempt has been made to gain elasticity and freedom of choice for students during a four-year course of study by reducing the required work.

At Harvard the opportunity of extensive selection is given especially in the fourth year, when students may elect to work under the guidance of tutors. The tutorial system also applies to superior students in their earlier years, and there is a policy of offering special privileges to such students.

The work of the third year has been revised recently so that didactic lectures occupy only one hour a day, given from 8:30 to 9:30 in the morning, and allowing the remainder of the morning to be used by groups of students in various clinical activities. Two afternoons a week are free for elective work, while one afternoon is devoted to the correlation of public health and clinical medicine. An account of the innovation in the third-year curriculum has been described by J. Howard Means in the Bulletin of the Harvard Medical School Alumni Association of January 1930.

Comprehensive examinations have been conducted at the end of the fourth year at Harvard for a number of years, and this practice has proved valuable, it is believed, but the results do not seem to have been quite as important as was hoped.

The tutorial system at Harvard has some decided advantages, but, perhaps, carries with it what seems to be unnecessary machinery if more nearly ideal university conditions could be established. This plan needs further study than has been given it before any further comment would be warranted.

The very extensive, though somewhat scattered, hospital facilities at Harvard put the school in a position to offer much variety in its clinical opportunities. The tutorial plan and the method of holding compre-

hensive final examinations appear to be the features of special interest in the Harvard plan. An effort is also being made to break down the more or less artificial barriers between various clinical fields, a process that has much in its favor.

### The Johns Hopkins University Plan

The Johns Hopkins Medical School is now in the stage of viewing its own experiment after two years' trial with a revised curriculum. Here the regular academic year from October to June is divided into four quarters, and the essential required courses fill 2,636 hours of the possible 5,148 hours of work during the four years, leaving 2,360 hours for elective work. These are divided among the four years as follows:

| | 1st Year | 2nd Year | 3rd Year | 4th Year |
|---|---|---|---|---|
| Required: | 896 hrs. | 552 hrs. | 620 hrs. | 586 hrs. |
| Free: | 360 hrs. | 704 hrs. | 616 hrs. | 680 hrs. |

There is much consecutive free time, especially in the third and fourth years. The plan calls for class work mainly in the first and second years, with individual work mainly in the last two years. The general plan is aimed at giving the minimum requirements for all medical men, and allowing the maximum choice in diversifying the curriculum. The curriculum is also aimed at giving latitude in regard to the place in which elective work is done and the men under whom it is carried on, migration in this country and abroad being encouraged during the course.

Comprehensive examinations are held at the end of the second and fourth years, the examinations covering groups of subjects. No grades are assigned to students, and they are designated as having passed or failed the courses.

An attempt is made to cultivate the spirit of self-education. The fact that inequalities exist among the various departments seems to be a hindrance in carrying out the Johns Hopkins plan thoroughly.

In the third year, one quarter is assigned to medicine and one to surgery, and one to neuropsychiatry, with one quarter free, with small periods assigned to obstetrics, gynecology, laryngology, etc. Each course is given in each quarter. In the fourth year, one quarter is assigned to medicine and one to surgery, half the year being free.

It may be said that the spirit of the curriculum is that of a university graduate school, but the methods are obviously quite different although each student elects to do advanced work in some one department.

As an example of the method by which a student may pursue his work in a single clinical subject, it may be said that all students are required to complete three courses in medicine designated as elementary medicine, minor medicine, and major medicine. These courses may be completed by the end of the third year if a student so elects his courses. He can be away from the medical school from the end of the third year to the beginning of the last quarter of the fourth year, and a few students have taken advantage of such free time to study abroad or in other universities in this country.

The great reduction of required work has made it necessary for some of the departments to complete what they consider as essential for all medical students by means of electives, and it is thought by a number of the faculty that the required work has been too much shortened. The method seems to be superior as compared with the previous more conventional curriculum for about one-third of the students, about as well adapted as the previous curriculum for an equal number of students, and less effective for the remaining third.

On general principles, teachers and many students seem enthusiastic, but modifications appear to be indicated, which will be possible with the completion of the new medical and surgical clinics soon to be occupied.

### Conclusions Drawn From This Study

After a thoughtful consideration of the various so-called experiments that have been described, the Curriculum Committee of the Cornell University Medical College has adopted certain general principles for its own guidance. The modifications of these principles that may seem wise in actual practice cannot at this time be predicted, and it is not practical to go into a discussion of the reasons why these propositions seem worthy of adoption by our Curriculum Committee. They are as follows:

1. Medical knowledge is so extensive that only a relatively small part of that needed as preparation for a career in medicine can be acquired by a student during a reasonable length of time before he is granted the degree of doctor of medicine.

2. A reasonable length of time to be devoted to medical study after completion of collegiate education and before beginning independent professional work as a graduate in medicine is approximately four years.

3. As variations occur in the aptitude, application, speed of acquiring knowledge, and preparation of good students, the time necessary to fulfill the requirements for the M.D. degree should not be invariably fixed for all students.

4. As medical science and medical practice may be pursued in a variety of ways, the medical student should be given opportunities to vary his course of study according to his special interests and special talents.

5. The quantity of knowledge that must be acquired by all students should be reduced as far as is compatible with the granting of the M.D. degree, and should not require more than about two-thirds of the time available during the course of study leading to the M.D. degree.

6. All teaching should be directed toward the development of the spirit of scientific curiosity and the creation of life-long students of medicine who will be satisfied only by the highest standards of scientific thinking and of professional conduct.

7. The medical studies should be arranged so that migration of students from one university to another is encouraged.

8. The social and cultural aspects of medicine should not be lost sight of in medical education.

9. Medical education should be conducted in the spirit of university graduate education.

10. Freedom in the selection of courses and in methods of work should be allowed as far as is compatible with the progression of studies necessary in medical education.

11. The course of study leading to the M.D. degree should be divided into two parts, the preclinical and clinical fields of study.

12. The preclinical studies, consisting of the subjects anatomy, biochemistry, physiology, pharmacology, bacteriology, and pathology, must be acquired before clinical studies are begun. Proficiency in these studies should be tested by comprehensive examinations conducted by representatives of both the preclinical and clinical departments. Approximately one and one-half academic years should be the minimum time necessary to acquire the preclinical subjects.

13. Completion of studies satisfying the requirements for the M.D. degree should be tested by comprehensive examinations also conducted by representatives of all departments, but mainly by those of the clinical departments.

14. A thesis should not be required for the M.D. degree, but students should be encouraged and given time and opportunities to major in some one department, and to engage in special individual work during this time, which may lead to results worthy of publication.

15. Requirements for the M.D. degree should be met by credit for required work, for optional work satisfactorily performed, and by the passing of comprehensive examinations.

16. Free time for optional work should as far as possible be given in large blocks when students should be freed as far as possible from required work.

17. Free time for optional work should be more abundant during the later part of the medical course than during the earlier years, as students then have developed more definite interests from a wider variety of experience. Opportunity and encouragement should be given to students to pursue the study of preclinical subjects during the clinical years.

18. In order to develop the spirit of graduate university education, the seminar method of instruction should be encouraged, and grading of students should be discouraged. No official grades should be kept, and only the designation of passed or failed should be recorded. When necessary for the determination of superior students, voting by instructors may be resorted to, and a method of designating in a general way the quality of work done by each student is desirable.

19. The tutorial system now being used at Harvard does not commend itself as desirable.

20. Some form of adviser system, especially for younger students seeking guidance, is desirable.

21. The Yale system, but without required theses, and with a more general participation in comprehensive examinations by members of the preclinical departments, seems desirable.

22. In the Johns Hopkins method, the reduction of required courses to a minimum, the division of the academic year into quarters, and the provision for migration are features of merit.

23. The development of well-directed elective work deserves serious consideration. It requires a large number of efficient teachers, but is particularly valuable in offering effective opportunities not only to regular candidates for the M.D. degree but also to graduates in medicine seeking special fields of study.

24. The development of technical and scientific proficiency in the various special fields of clinical medicine should not be attempted during the regular medical course, but outstanding facilities and instruction should be available for those who are qualified to undertake prolonged advanced training.

25. Intimate association of regular medical students with those pursuing advanced studies, and with regular members of the teaching staff, should be encouraged.

26. The future educational policy of the New York Hospital-Cornell Medical College Association should be to offer opportunities

to a carefully selected, relatively small number of candidates for the M.D. degree, and at the same time to undertake the further development of especially promising graduates in medicine, so that they may become leaders in medical science and in medical practice.

## Discussion

DR. B. C. H. HARVEY (University of Chicago): It is interesting that Dr. Robinson entitled his paper a discussion of "experiments" in medical education. No apology is needed for designating any plan of medical education in the United States at this time as experimental. Our Association is devoted to the idea that medical education can be improved and will be improved, and that our chief business in the Association, as in the schools, is with that improvement.

There were one or two points in connection with Dr. Robinson's discussion of our experiment at Chicago that might be made a little clearer, and there were some things about which he was doubtful, and about which I do not think he needed to be doubtful.

One of those points was his statement that the elective plan followed by our students, in accordance with which each student is free to plan his own program of studies, was not really sufficiently elective to allow him freedom to get away from the beaten track. He has received a wrong impression, possibly from some of the students with whom his representative talked. They have freedom to get away from the beaten track, and they do it. He suggested that they might have considerable guidance in the work of the first two years. They do have that guidance, although there is no definite program set down in the announcement which all the students follow or which they are required in any way to follow.

There is, however, some supervision. While each student plans his own individual program, and is not only permitted to do it but required to do it, he can not carry out that program until it is approved by the dean. He brings it to the dean and the dean reviews it with him, and discusses with each student individually his special objectives. It is recognized that each student may have his own objectives, differing from those of other students in accordance with his different training, his different character, and his special ability.

In planning his individual program, the student may get some help from eight or ten "suggested programs" which he may consult in the dean's office.

It is necessary that the students in the first two years have some such guidance largely because of the difficulty of making a time table. You all know there is difficulty in making a time table that will work even when the students are pretty much in locked step. With the increasing amount of election, increasing difficulties develop in making a time schedule.

If a student is to have an ideal amount of freedom, then the courses which he wants to take would necessarily be offered in each of the four quarters of the year so that he could take them when he liked. But it is not practicable to offer all courses in each of the four quarters, so we have to offer courses as frequently as possible, and then suggest a few programs which are practicable from the time table standpoint.

There is another way in which the students get a lot of freedom, more freedom I think than Dr. Robinson appreciated. That is by studying some

medical subjects in the college before coming into the medical school. We require a Bachelor's Degree before admission is granted. It seems to many medical educators in the country that a Bachelor's Degree represents more college work than is absolutely necessary in preparation for the study of medicine, and for some students I think so too. Four years in college seems all too long, but four years in medicine seems all too short, and we have deliberately adopted the policy of encouraging some students to study some medical subjects in the fourth year, perhaps in the third and fourth years of college work. Anatomy, histology, embryology, physiological chemistry and physiology are subjects which may be studied in the fourth year of the college work, and those students come to the medical school with these things already fairly well covered. They are not asked to repeat them, but the medical course is not shortened. The net result of doing that medical work in the college is that the student comes to the medical school with free time and opportunity, so that he does have the ability to make an elective program for himself.

The extent to which they do that is indicated by one or two simple facts. For the last six years, in the University of Chicago, an average of thirty students each year have done advanced elective work in some of the so-called medical departments, in amount sufficient to warrant granting one of the advanced degrees, Master of Science, or Doctor of Philosophy. Half of them have taken the Degree of Doctor of Philosophy. Over 80 per cent of them in the last five years have done more than the minimum amount of work required in the medical school, by taking elective courses on their own initiative. The average amount of additional elective work which has been done by these students in the first two years has been one quarter, three majors. In that way the students do find time to do special elective work in some department, but they could not find time to do advanced elective work unless they came in with some of the medical work already done. Unless they had that, they would feel forced to give all their time to the so-called required subjects.

We have no rigidly required courses in the medical school. No individual course is required by us for the M. D. Degree. Students are encouraged to learn things by themselves.

Dr. Robinson mentioned the thesis as a requirement for the M. D. Degree. That requirement exists in the medical school in the quadrangles. It is not a requirement in the other medical school of the University of Chicago, Rush Medical College. Our work in the school on the quadrangles is essentially experimental. We all regard it as experimental, and we required the thesis for the reason that it seemed that independent work which the student does on his own initiative, in which he must study the work previously done and review it critically, in which he must plan a piece of work which will add to knowledge on some subject in medicine, is the best kind of education a medical student could have. In that work he must develop his critical ability, his initiative, his independence, and he must become capable of going on by himself. When he has done that work, he knows that he can go on by himself.

All departments encourage that kind of work on the part of the students. They take great interest in the student who is trying to do it. They give him any amount of time and help. If that spirit is evident in the departments it must appear to the student that he can, with their help, become capable of doing some independent work and get ready to go on as an independent and progressive medical man whose study will not stop when he graduates but will

continue throughout his life. We hope our graduates will have that stamp.

This requirement of the thesis is, of course, experimental, as all the rest of it is. It may be that the conclusion which Dr. Robinson has drawn, that the thesis should not be required, is correct. It may be that the University of Chicago will come to that conclusion after a while. In the meantime, we are making the experiment.

The situation in the University of Chicago made it easy to experiment along that line. The university had no medical school of its own until 1924. We have had, since 1898, an affiliation with Rush Medical College. In 1898 there was a plan for a medical school, and in anticipation there were established in the university departments of anatomy, physiology, pathology, hygiene, bacteriology, and physiological chemistry. But it was not till 1924 that the medical school was realized. So, for twenty-six years these so-called medical departments operated as university departments, and the students looked forward to various kinds of degrees, Bachelor, Master and Doctor of Philosophy. Into these departments came students who were candidates for the Rush M. D. degree. The so-called medical departments were thus primarily university departments which developed under the university spirit, and there was a long succession of students who took the degree of Doctor of Philosophy and other degrees for which a thesis is required.

When the medical school was organized, these departments continued to work in the same way they had been working for thirty years. The new clinical departments were organized in the same way. That experiment is going on with the so-called medical department organized in relation to the university in exactly the same way as are the departments of physics, chemistry and zoology. They have students from the medical schools, but they also have others. A thesis is required for the degree of M. D. and also for the degrees of Ph. D. and M. S.

Dr. Burton D. Myers (Indiana University): Dr. Harvey, as I understand it, says there are no required courses in their medical schools and that they O. K. the program, the elective program, of each student. I am wondering how that works out. Does it work out in reality so that any student ever gets the M. D. degree without having had every one of the fundamental preclinical courses?

Dr. B. C. H. Harvey: No, that appeared in Dr. Robinson's statement. I did not mention it because it seemed quite clear. The work of the medical students is divided into six groups of departments. For instance, in the anatomical group we have gross and microscopic anatomy, neurology and embryology. The student must take a certain minimum number of courses in each one of those groups, and he must pass the general comprehensive examination in each one of those groups before he gets his M. D. degree.

In the anatomy group he must take four majors. We do not say which four, nor do we say he must take any particular one, as most of them take more than four courses. We would be very well content to have him learn something by himself. They must take the minimum of courses in each one of the groups, and must pass a comprehensive examination, both oral and written, in each one of these groups before he goes on.

Dr. B. D. Myers: Will Dr. Harvey tell us the kind of program he disapproves. For instance, in the case of a student who was getting his pathology

before he got his microscopic anatomy, I suppose you would not approve a program of that character.

DR. B. C. H. HARVEY: We have eight suggested programs for preclinical work, eight that differ from each other according to the different kinds of preliminary training that our students have. We like to have students with different kinds of preliminary training and with different objectives, and there are these eight suggested programs. They cover six consecutive quarters, two years.

DR. MYERS: With a certain sequence of subjects?

DR. HARVEY: In all those suggested programs, the subjects come in logical sequence, so there is not much trouble on that score. If the student wants to make another program, he is permitted to do so. Many of them do that, and some of them have to do it. Any student is perfectly free to make an individual program differing from these, and that is then looked over by the dean and approved.

DR. MYERS: Inasmuch as the student must pass a comprehensive examination, it ultimately adds up to something like this: 99 per cent of the students would take the subjects essentially the same as the subjects taken in those schools that have a very carefully outlined sequence of courses.

DR. HARVEY: No, that is not true. Instead of having 99 per cent of the students following one program, the students get out of step in the first two quarters, and in the third quarter you would have trouble in finding any two programs alike. You can see that that is necessary. If we encourage students to study some medical subjects in the college in accordance with their special interests under the guidance of the college deans, they are going to come into the medical school with all kinds of different preparations and all kinds of different interests and special training. They start to follow these special interests from the beginning. It is not at all true that there are 99 per cent of them following one program. As I said, I have eight programs that I suggest, differing in accordance with differences in the preparation of students, but there are more than eight programs actually being followed by the 110 students who come in each year.

DR. ALAN M. CHESNEY (Johns Hopkins University): I am very glad somebody from the outside has had the temerity to assess our experiment because it is rather more than I have cared to undertake in spite of being importuned by our Secretary on more than one occasion to tell the Association, in the shape of a formal paper, what has happened to the experiment which was reported at the Montreal meeting in 1927. When I entered into administrative work in 1927, it fell to my lot to see the new curriculum through the initial stages, so I can speak with a certain amount of feeling concerning it.

I am not sure that the time has come yet to give any formal report on it. There are a few things, however, which might interest you.

I must confess I am confronted with the question of how one is to assess any educational experiment. Having spent some years in laboratories where I have worked with animals and been able to set up controls which were valid, I can now see, when I come to assess an educational experiment, that I have no controls at all, at least not in our own institution. I, personally, am not old enough to hark back over a period of thirty or thirty-five years and compare our product now with our product in the early days. We have not yet, as a

matter of fact, graduated any student who has gone through the entire curriculum, and therefore it seems to me a little early to give you any final report.

I do think, however, that I can say without fear of being contradicted by most of the members of my own faculty, that it has not hurt the school. The men are no worse under this régime than they were before.

We have not yet selected any interns from men who have been through this curriculum, and if you accept that as the acid test—I am not sure that I do—of what the curriculum is doing, we have that to face.

Certainly, the good man in the school profits more than he could have under the old régime where there was much more expected in respect of required work. I do not think that you need bother very much about the third third of the class.

We find our men doing this with their free time: Several of the good men will migrate, and we regard that as a very healthy sign. Some of our men have gone to Harvard, Michigan and Columbia. They have come back with a much better insight, I think, into medicine as a whole than they would have had if they had remained with us throughout the entire four years. Most of the men by the time they reach the fourth year, when they have the most free time at their disposal, have already indicated by their choice of electives that they know what they want to do.

The criticism frequently raised in our own faculty is that the medical student is too immature to judge and make proper use of his free time. That is certainly true in some instances. We have had to discourage such things as men at the end of the second year attempting to put free time in on clinical specialties before they have had adequate training in general medicine and general surgery. We have combated that tendency wherever we have seen it arise.

On the whole, I think the plan is going to work well, as far as I can judge at the present time. The students respond quite well to the responsibility which is placed on them in the proper use of the time at their disposal. One of the best features of the new curriculum is that it forces a student to give more thought to his medical education. It should make him try to realize, at any rate, what he must do in order to secure adequate training. Perhaps five or ten years from now we shall be in a position to give you an adequate report on the experiment. We do regard it as an experiment.

Dr. Irving S. Cutter (Northwestern University): This is a stimulating report. I am not sure that I am not inclined to agree with Dr. Myers that a cross section of these programs would show probably about the normal program that the average school sets up. I am not positive of that, but I am inclined to believe that would be found to be true.

I wonder if I understood the paper correctly in the statement that the first two years at Yale were rather rigid, namely, over 2,000 specifically required hours. Was that correct? I think the students, some of whom I have talked with relative to the Yale program, feel that they are driven rather hard during the first two years, with a very sharp let-up in the third and fourth years. There is rather an abrupt widening out of the thing for which they are scarcely prepared.

Another thing which I think should be particularly noted by this Association is the emphasis being given by Yale in their effort to bring to the medical

student the consciousness that, after all, he is to take his place as a member of society and not as a distinctly cold-blooded, isolated scientist.

DR. F. T. VAN BEUREN, JR. (Columbia University): I want to express my admiration for the lucid manner in which Dr. Canby Robinson dissected these various so-called experiments at the medical schools mentioned, and the charming way in which they were presented by Dr. Morrill. It was so clear that I almost felt at one time I knew what was meant by the university spirit in graduate teaching, and I do not know that I was right or not, but I took it to be a spirit of perfect freedom of choice in what was taught and how it was studied.

This is something that probably could not exist at medical schools; for, whereas in taking an M. A. degree or a Ph. D. degree a man may be following one of a number of lines, in taking an M. D. degree he is following a fairly well defined line. If he is going to become licensed to practice, it seems to me a very considerable amount of required work is advisable in order that the student may prepare himself properly to become licensed. What that required work should be is a matter of experiment, and we have been experimenting with it at Columbia for five years. At present we have a total of 1,700 hours of required work in the first two years, and the rest is elective time. I think the required time is badly distributed because there are 1,100 hours in the first year, and a trifle under 800 in the second year. I think the students have too much free time there. In the third year they have the afternoons or mornings of one quarter of the year free for elective work, and in the fourth year they have both mornings and afternoons of a quarter of the year free for elective work.

They are not required to do any elective work. That is actually free time, but I should say at a guess that 99 per cent of them take some elective work. A few of them do elective work toward an M. A. degree at the same time they are taking their M. D. degree work.

For a number of years we have had a provision in our catalog that a man, with the special permission of the faculty, can spend his fourth year in one of the special departments, physiology, for example, and still receive an M. D. degree at the end of the four years. I know that in my experience of nine years, only one man has taken advantage of that.

I presume a great many of these experiments are going on in all the schools. One experiment was suggested at the meeting of the executive committee of the faculty the other day. It was that at the end of the second year and at the end of the fourth year the National Board examinations be substituted for the regular school examinations, and that the M. D. degrees be not given until the two parts of the National Board examinations had been passed by the students; the examinations of the first and third years to be given, as usual, by the school itself.

It seemed to interest the members of the committee, but they wanted a little time to think it over. I shall be very much interested to know if any other school has had that proposal made and, if so, whether it has been accepted by the school.

DR. PERCY T. MAGAN (College of Medical Evangelists): The plan of having our students pass the examinations of the National Board of Medical Examiners went into effect for the first time with the Freshmen who entered in September. It is our plan to have all of the students take the regular examina-

tions from their teachers the same as heretofore during the first year. This gives us a chance to eliminate those who in the opinion of the faculty have no chance of making good. At the end of the second year all will be obliged to take Part I of the National Board. They will not be permitted to pass into the Junior year until they have successfully passed that examination.

At the close of the third year these students will be required to take examinations from the teachers and at the end of the fourth year they will take Part II of the National Board.

We are hopeful that this plan will give our students a broader view of the study of medicine. We believe that it will have a tendency to cause them to study for the good they get out of the subject rather than to study to learn certain things in which they know their own teachers are especially interested. Getting in examiners other than our own should be very helpful.

Dr. E. P. Lyon (University of Minnesota): We all, of course, feel that we ought to bring the spirit of the graduate school into the medical school, the spirit of research, the spirit of independent study. At the same time, it seems to me we can not avoid the fact that our students approach their work very differently. The graduate student is concentrating on a narrow field. He approaches his work not from an elementary standpoint, but from an advanced standpoint. He is supposed already to be familiar with his subject in a general way before he begins graduate study. Take the program pursued for any advanced degree and you will see that is true.

In the medical course, on the other hand, you are not concentrating on a narrow field but cultivating in a less intensive way a very broad field. Moreover, the student approaches that broad field from an elementary standpoint. Take any of our branches and think of what the men know about it before they come in—pathology, medicine, surgery. They have to get the very elements in our courses, and in the required courses they never get more than the elements. If this were not true why should we consider that long additional study is essential for one to be able to teach one of our subjects?

Sometimes our Juniors in the medical courses, having taken their B. S. degrees, speak of themselves as graduate students. They are such only in eligibility. In reality their program consists of the elements of medicine, surgery, pediatrics and obstetrics.

Our idea should be to get the interest of the student as much as possible; get him as much as possible to lay out and feel responsible for his own curriculum; stimulate him to do something out of the ordinary. But I do not believe we can bring the medical curriculum under the ordinary mechanism of a graduate school for two reasons: first, that very great difficulty that you are covering a very broad field instead of a narrow field; second, at the moment of his approach to it the student is not in position of having some knowledge of it, but is in the position that he has to attack the elements of it. Those, it seems to me, are two very deep differences in the situations of medical education versus graduate education.

Dr. C. V. Morrill (Cornell University): I might ask this question of Dr. Harvey: Can any head of a department refuse to take a student whom he does not think qualified to take his course? As an example, suppose a student goes to the professor of pathology, or suppose he registers for a course in pathology without having taken a course of normal histology, or some phase of anatomy.

Could the professor of pathology say, "You are not qualified to take my course?" Is that possible, or is it done in Chicago in that way?

DR. HARVEY: Yes, that is perfectly possible. When he consults the dean as to whether he could carry his work, he is always referred to the head of the department with a note as to whether it would be worth while for him to undertake the work. If the department decides he should not do so, the dean advises him accordingly.

## Correlation Clinic in the Freshman and Sophomore Years*

WILLIAM A. O'BRIEN
Director of the Division of Interdepartmental Instruction, University of Minnesota Medical School

The University of Minnesota Medical School established a division of interdepartmental instruction in the fall of 1928. The purpose was to develop a series of clinics for the freshman and sophomore years on a nondepartmental basis. We were encouraged by reports of similar demonstrations elsewhere. This is a preliminary report of 90 clinics which have been held to date and a discussion of our plans for the future. No attempt has been made to study by the questionnaire method the development of the plan elsewhere.

### Curriculum

One clinic is offered each week during the freshman and sophomore years. In the first year of our experiment only the freshman class was included. Last year both classes had one clinic each week during the year. A beginning freshman clinic was also attempted last year for the first time. The primary purpose is to parallel the courses required in the preclinical year and not to advance clinical instruction in the curriculum. The men who teach the course have been selected with care.

The courses are known by preclinical titles as follows: 1. Introductory Clinic. 2. Anatomy. 3. Physiological Chemistry and Embryology. 4. Neurology (neuro-anatomy). 5. Physiology. 6. Pathology.

Bacteriology, immunity and histology are included in appropriate places but do not have a special designation. Because of the place phar-

*Read at the Forty-first Annual Meeting of the Association held in Denver, Colo., Oct. 14-16, 1930.

macology occupies in our curriculum, it has not been attempted to date, but plans are under way for introducing a few clinics in pharmacology.

### Choice of Subject Material

The choice of subject material is made on the basis of advance in knowledge of the class. The chairman of the course is present at every clinic and assists at the same. In addition, several clinics are now given by the chairman which will probably be offered by some one else in the future. By constantly quizzing the group on their knowledge of the subject discussed, we believe that we have succeeded in keeping up with them rather than confusing them by getting too far ahead.

Programs of the preclinical department are closely followed and frequent consultations are held with the directors of these divisions. The spring sophomore clinic in pathology, because of the splendid clinical viewpoint in the department of pathology at the University of Minnesota, closely resembled an ordinary junior clinic. At this time the students are also taking physical diagnosis and other subjects of a clinical nature. The department does not have control of all the correlations done by the school. Each department is making a special effort to accomplish this, and special mention should be made of the divisions of anatomy, pathology and bacteriology. The x-ray department also cooperates with the department of anatomy in teaching correlation on this subject.

### Faculty

Faculty: The director came to the department of pathology from active practice ten years ago. He has taken a special interest in correlating fundamental and applied knowledge in the clinical years and has also had a large experience in exemplifying scientific matters for laymen through popular talks.

The associate in the division of anatomy was formerly in practice, returned to the university where he took his Ph.D. in this subject and is now taking a graduate degree in surgery where he is in active service in the University Hospital. His knowledge of both fundamental and applied anatomy is well suited for this type of teaching.

The associate in neuro-anatomy also followed a similar plan. He has a Ph.D. in neurology and has done special work in the fields of neuro-anatomy and neuro-physiology. He is at present neuro-pathologist and is on active duty in the clinical division in the University Hospital.

The associate in pathology also had a similar training. He was connected with the department of pathology for ten years before going into clinical practice. He is one of the finest teachers on our staff. The chairman teaches beginning courses in biochemistry and physiologic

groups. The presence of two instructors in the room at one time is of distinct advantage. The chairman is able to gauge the progress of students are making and to assist the associate in the matter of selection of material and presentation.

## Technique

No lectures are given. An attempt was made to correlate the material of the subject matter of the preclinical years in a practical way and not to repeat the preclinical teaching except when necessary.

## Discussion

Dr. B. D. Myers (Indiana University): This is one of the very best statements of any experiments of the sort I have heard. However, I was wondering if they did not run the grave danger of having their clinical students reach the conclusion that the practice of medicine is the application of physiology and anatomy and pathology.

Dr. C. W. M. Poynter (University of Nebraska): Many years ago I prevailed on Dr. Cutter to allow us to justify anatomy through an experiment of this kind. From the interrogation we have carried on with students, our inclination is to believe that it is viewed from the standpoint of a Roman holiday, that the interest develops in connection with this idea.

We have had quite a parallel experience to the man who carried out his investigations on postmortem room attendance. During his first two years the student is anxious to attend and never would attend again during the junior or senior years unless he was required to do so.

My enthusiasm in connection with this work is now very much less than it was a number of years ago. I am inclined to believe that the freshman student is largely anticipating the work of his later years. He is forcing a vicarious growth in his own mind. He has a tremendous problem to go home at vacation or Christmas and impress his community with the fact that already he is competent to take care of his medical clients. If we have furnished him an opportunity of this kind, he perhaps carries his make-believe somewhat farther than he would otherwise.

Our college has been very fortunate in having several men well equipped in anatomy who have also conducted these surgical clinics. We were once teaching hernia with clinics and dissection. One of the students, in giving his impression of the clinics as an adjuvant to anatomy, illustrated with a story—he had gone to church with his mother because she was very fond of the minister. The minister had discussed immortality of the soul. When his mother asked him what he thought of the sermon he said he never had doubted immortality of the soul until after he heard that sermon.

Dr. William Pepper (University of Pennsylvania): I think Dr. O'Brien is laboring under the impression that I am the Dr. Pepper that read the paper about this experiment a few years ago and conducted the clinics, whereas I am only his older brother and the dean. We still believe in it. We have made very little change in it, and I wish my brother were here to have heard Dr. O'Brien because I think he would have gotten some points which would have been of help to us.

I think it is well worth while, although not an easy thing to do and do right. Still, it is perhaps easier than the thing in reverse action, that is, in the third and fourth years trying to introduce more of the work of the first two years. That is a harder problem, and no so easily solved.

Dr. A. S. Begg (Boston University): For a number of years we have been experimenting with "correlation exercises" at Boston University. We were stimulated to make the attempt as a result of the work of Dr. Harvey Cushing at Harvard, beginning, I believe, in 1920. It was his practice to invite the first year men to his clinic at the Peter Bent Brigham Hospital one day per week. He had the schedule for the anatomical course and used his clinical material to emphasize certain points.

We attempt to correlate the subject matter of all of the laboratory courses of the first year with the demonstrations, and I am rather interested to note that one or two of the things we have done are not included in the program presented by Dr. O'Brien.

Our first exercise after the initial explanatory one is an exercise on posture, which fits in nicely, since the students have been dissecting the back during the previous week.

I am interested, too, in the fact that the students at Minnesota are not compelled to attend these exercises. With us there is no record of attendance and no examination, and I can bear out the statement made by Dr. O'Brien that this is one of the series of exercises where they are not absent.

The x-ray is very helpful to us in the first semester, and as we go on and take up physiology and chemistry we find that the field of the course widens out very considerably.

One of the things that we have done in connection with biochemistry, for example, in addition to the usual work on diabetes, etc., is the problem of child feeding.

It is still an experiment. We are not following the same program from year to year, and we find that that, in itself, keeps us from getting into a rut. We do not follow the same sequence and we do not use the same men. At first we noted a little bashfulness on the part of the clinical people in talking to the first year men, but that seems to have passed off as time has gone on.

One of the things which has impressed me is the effect on the students of knowing that here is a clinical man, for example, in the case of the genito-urinary surgeon, who is making his living by using every day some of the embryological and anatomical facts with which they as beginners are playing in the laboratory at the very same time.

Dr. William A. O'Brien (University of Minnesota): I am sorry if I left the impression that anatomy was a brief bone of contention. It happens that we select this material at any time, and have the comments made on physiology and biochemistry. They apparently were groping about for more information in those fields than we were giving them. I think it would act as a stimulation.

I should like to state we have the same impression that Dr. Beggs has, the idea that a clinical man really knows what they are supposed to know makes a very profound impression on them.

# Take Them Earlier and Keep Them Longer

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There are two problems that stand out in the discussions of medical education. These are: (1) the difficulty in selecting suitable students, and (2) the difficulty in imparting to them an adequate medical education. It is the purpose of this paper to make two suggestions which, in my opinion, appear to be logical remedies to these two problems. These suggestions may be expressed in the words "take them earlier and keep them longer," or in less slangy language, (1) admit the students at the time of their premedical college education and let the medical school itself give this instruction, and (2) lengthen the course in the medical school.

## Premedical Instruction to be Given by the Medical School

The essentials of this may be outlined as follows:

1. The student should be admitted to medical school directly from high school and with similar qualifications as are required for admission to an acceptable college.

2. The premedical instruction is then to be undertaken by the medical school. This is to consist in the same premedical subjects (chemistry, physics, biology, English composition and literature, and French, German or Spanish) as now, or in the future, required by the Association of American Medical Colleges.

3. The faculty giving the required premedical courses is to be an integral part of the faculty of the medical school.

4. The time not needed for the required premedical courses may be used in the taking of nonmedical courses given by the faculty of the college (nonmedical). The student should be given relative freedom in the selection of such additional studies.

5. It should be optional with the medical school if it prefers to concentrate the premedical courses and lessen the time (not below the minimum requirement of the Association of American Medical Colleges) before commencing the study of medical science.

6. Upon completion of the required premedical studies students who are deemed suitable should be selected for the study of medicine.

The above outline is offered as tentative and should be, of course, subject to whatever modification is believed to be desirable by the faculty of an individual medical school.

### Lengthening of the Medical Course

One or more years may be added. The extra time may be utilized for further work in the medical school or additional experience as intern in a hospital.

The amount of time by which the medical course should be lengthened and the use of that time should be left to the decision of the faculty of the medical school. The principle of academic freedom should be maintained.

### Comment

I am, perhaps, less confident of the suggestion to "keep them longer" than of that of "take them earlier." A few comments may be of value.

It has been stated often by many educators that the teaching of a subject that is spread over a long period and taken along with other subjects is far more effective in the long run than when it is concentrated in a brief space of time. Medical science has greatly increased in size over what it was relatively recently. It is now recognized as impossible to impart much more than the fundamentals or, if you wish, an introduction to the science of medicine in the space of four years allotted to study in the medical school. Recognition of the vast scope of medical knowledge has lead to changes in the curriculum, especially in the direction of reducing the content of various courses so as to permit the introduction of newly developed subjects. This, in turn, has been followed by further efforts to reduce the number of required hours as the overcrowded curriculum did not give the student sufficient free time to think, assimilate what was being imparted to him, and if possible to go further into the medical fields in which he felt a special interest.

In his chairman's address to the Section on Medicine of the American Medical Association, E. E. Irons[1] said: "To meet his responsibilities, the coming physician needs a better rather than an inferior education." If, in the past, four years was a suitable period for undergraduate medical education, is it not probable that the growth of medical science now warrants an additional year or even two devoted to the course in medicine?

### Objections to Taking Them Earlier

1. It would be putting the medical school to additional expense. The cost could, however, be lessened if the medical school were permitted to conduct the premedical part of its curriculum in the build-

1. Telescopic Vision and Medical Economics, J. A. M. A., 95:244, (July 26) 1930.

ings (or plant) of the collegiate part of the university to which it is affiliated. The additional faculty might also be obtained as far as mutually practical by loan from the college. The actual increase in the cost of conducting the premedical education might by such cooperation be made minimal. It might involve mainly the transfer of the expense of premedical instruction now borne by the collegiate part of the university to that of the medical school. The expense of the transfer of the premedical courses to the medical department of the university could be reduced by proper cooperation. If the change were believed to offer a significant improvement in medical education the matter of some, though not necessarily great, increase in cost should not be a deterrent.

2. It would lengthen the medical course. This would be true in appearance but in reality it would not do so as the same amount of time devoted to premedical study in college is now a requirement for admission to medical school. In fact, in 1929 exactly 76.9[2] per cent of the freshmen entering the seventy-three American medical schools had spent more than two years in college. Therefore, it is believed that if the medical schools gave the premedical studies it would do away with the years in excess of two spent by the prospective medical schools. Some institutions might decide to shorten the premedical part of their course to a single year. The report[3] of the Council on Medical Education and Hospitals states that the age of students graduating is 26½ years—or 27½ years counting the internship—and expresses the opinion that any method that can reduce this maximum age would be a move in the right direction. According to this criterion, to "take them earlier" would be such a move.

3. It would require the student to decide to study medicine before he had had proper time to achieve this conclusion. Perhaps so, and yet at present he is expected to make this decision at the same period in order that he may take the courses required before he is acceptable for admission to medical school.

4. It would sacrifice the culture obtainable by study at a college not having a medical school. Yes, but it is to be expected that the education obtained under the control of the medical school would be made satisfactory to its faculty. If not, it should be their responsibility to make it so.

5. Similarly it might be feared that it would make the students too much alike. This perhaps is a real objection and yet it is a minor point, and furthermore one doubts if it would remove the difference between

2. Zapffe, F. C.: Analysis of Entrance Credentials Presented by Freshmen Admitted in 1929, J. A. A. M. Colleges, 5:231, (July) 1930.
3. Am. M. Assoc. Bull., 25:128, (June) 1930.

individual students. Does taking the same studies have such a leveling effect on different minds? There should be time available in addition to fulfilling the present premedical studies prescribed by the medical schools to be devoted to other subjects; here certain variation in the subjects selected might well be encouraged.

6. The plan is possible only to those medical schools which are part of a university. This is not absolutely true but practically it might be so. The school without university connection would not be forced to change from its present system of obtaining students. If it chose to do so it might obtain some from the overflow of those taking their premedical subjects in a university whose medical school undertook this instruction. At a future date any medical school could consider whether it was desirable to equip itself to give the premedical education.

7. It might force the present medical faculty to accept all students who had successfully passed the premedical courses given by this school. In other words, it might be thought that it would be necessary to accept students solely on the basis of their rating in the premedical subjects. This need not be true if it were known that the school undertaking the premedical instruction did not relinquish its criteria of qualifications other than scholarship. Furthermore, the part of the faculty teaching the premedical subjects being now a part of the faculty of the medical school should become familiar with ideals of the latter and should become both able and desirous of passing on to the more strictly medical years only such students as appeared to be desirable. With proper organization and sufficient contact between the combined faculty the selection of students should be improved. In fact, the making of the instructing staff an integral part of the faculty of the medical school should tend to lessen the tendency of some institutions to recommend unsuitable students to medical schools.

8. It would sacrifice culture. This objection might be raised by those who believe that culture is acquired by study in a college. The subject of culture warrants some discussion.

In the first place, what is culture and where is it acquired? I am of the opinion that there is considerable variation in the criteria which different individuals use in deciding that a person has culture. In questioning a number of nonmedical friends I find that some intend by the word culture that the person exhibiting it possess nice manners and the ability to express themselves well on subjects of common interest, such as world affairs.

The dictionary definitions of the word culture that are applicable

to an individual are: "The state of being cultivated; especially the enlightenment and discipline acquired by mental and moral training; civilization; refinement in manners and taste." It is a common practice to label certain studies cultural as opposed to scientific. I would emphasize that no such distinction is made in the dictionary definitions cited above. Is it not possible that some of us have been misled by the labels alone?

Is culture acquired at college? Davison[4] writes: "However, culture seems to be acquired by some persons without college training and never obtained by others in spite of numerous humanistic courses. As a matter of fact, the majority of those who have culture have gained it at home or from associations and environment early in life. Others, however, with the same advantages remain unsaved. Stewart Roberts has recently commented on the superiority of the culture of the British interns. The average British medical student acquires his cultural background at home and at school and rarely studies cultural subjects at a university. At Oxford, for example, all of his time is spent in biology, physics, chemistry, anatomy, physiology and biochemistry."

The foregoing does not, however, imply that the studies, other than science, pursued at college are valueless. They should tend to broaden the mind and interests of the students in varying degrees. It is emphasized that attendance at college is not the sine qua non of acquiring culture. Probably a compromise is desirable; let the student take whatever of such studies he can in the two-year premedical course, but do not prolong the latter because of the culture it is too readily assumed he would acquire by taking more of such subjects.

### Advantages of Taking Them Earlier

1. It should lessen the dissatisfaction with premedical education now entertained by medical schools. If the latter undertook this instruction they alone would be at fault if the courses were not satisfactory in content and in quality.

2. It would restore academic freedom to the college. Many college teachers have their own ideals of how they should teach their particular subject. They feel the urge to teach the subject for itself and disapprove of being mere preparers of students for entrance into the professional schools. They feel that the premedical requirements hamper them in their work; their reaction to these is, perhaps, quite analogous to that recently experienced by the medical schools to the require-

4. Davison, W. C.: An M. D. Degree Five Years After High School. J. A. M. A., 90:1812, (June 2) 1928.

ments imposed by the various State Boards on medical education. The similarity of the two situations should be readily appreciated by medical educators.

3. Students would be obtained at an earlier age. It is a concept of psychology (education), subject to certain limitations, that the younger mind acquires new knowledge more readily. Some medical educators are of the opinion that the medical school should give preference to students who have done superior work for two years at college rather than to those who have remained the four years needed to obtain a degree. It is the evidence of superior scholarship rather than the acquirement of additional credits that should dominate in the selection of medical students.

4. It would aid in the selection of medical students. This selection would be started earlier, given more time, and would be based more on the personal observation of the individual student by the faculty of the medical school concerned. The present average mortality of about twenty per cent of those entering medical school is serious, and that it is so considered is apparent by the considerable study being given to it. It is believed that much of this mortality could be relegated to the premedical years of the school undertaking the premedical instruction in addition to that now given.

It is probable also that the deletion of students from the medical school, if occurring during or at the end of the premedical years, would do less harm to both student and to the medical school. Many of these unsuccessful students might yet be suitable to be allowed, without much trouble, to transfer to the college proper and to complete the requirements for a degree from that institution. No injustice would be done to the student and no essential loss would be incurred by either college or medical school.

5. It would lower the average age at graduation from the medical school. This would be true under present conditions since, as has been stated above, in 1929 three-quarters of the freshmen admitted to medical schools had had more than two years of college work. It is believed that few medical schools would be tempted to give more than two years premedical instruction and some might give less. It is believed that lowering of the age of graduation from medical school which should result if the medical school itself conducted the premedical studies, as outlined above, is an important point in favor of the adoption of this change.

### Objections to Keeping Them Longer

1. It would lengthen the number of years required to obtain a medical education. There is a considerable body of opinion against such lengthening; economic reasons are perhaps the most important basis for this opinion. However, again quoting Zapffe's statistics, 48.9 per cent of the freshmen admitted to seventy-three American medical schools had obtained a college degree or had spent four years in college (4.1 per cent had no degree). The usual number of years necessary to obtain a college degree is four years and adding the four years in medical school makes a total of eight years. If the premedical part of the medical course does not exceed two years the sum of this and the present course in medical school amounts to but six years. There were but 23.1 per cent of these 1929 freshmen who had taken but two years of the premedical education. Therefore, it is possible to add one year, or even two, without increasing the age of the average student at the time he graduates in medicine. He would spend more time actually studying the science of medicine but the number of years in acquiring his education would not be increased over those prevailing under the present system. In fact, the course in medicine is longer in a number of foreign countries. Findlay[5] is of the opinion that it should, as it already does in Sweden, extend to seven or eight years.

2. The student may remain an undergraduate too long, whereas he should be allowed to graduate and put his knowledge to practical use. In other words, it may be feared that he will become stale from receiving too much or too prolonged instruction. Whether this prove to be a real or an imaginary objection depends much on the use made of the extra time devoted to the undergraduate study of medicine. The senior students can be given more opportunity to acquire experience as opposed to information without the former. Surely the medical faculty can be trusted to offer a supervision which aids but does not retard their students.

### Advantages of Keeping Them Longer

1. A more thorough medical education can be obtained. Some of the pressure and hurry in conducting the various medical courses can be lessened. The existence of adequate time is important in acquiring knowledge; it is believed that many aspects of medical knowledge will be more permanently acquired if studied for a longer period of time. Isn't there a present need for extending rather than limiting medical education?

5. Findlay, L.: Greater Versatility of Medical Graduate. Brit. M. J., Dec. 28, 1929, p. 1187; abstr. in J. Assoc. Am. M. Colleges, 5:185, (May) 1930.

2. The student could acquire more knowledge pertaining to the various specialties, which, though often spoken of in disparaging terms, contain much that is useful and, given time, can be imparted to the student. If the medical school desires to give more of this information to its students it should do so before he graduates. It is often then or never; after graduation but few physicians return for adequate post-graduate instruction.

### Practicability

When I arrived at the opinion of the desirability in medical education of the changes embodied in the words "take them earlier and keep them longer," I thought that there was some originality in this same opinion. However, such is not the case. I find that they are in use in England and in Canada. Dawson[6] writes: "Because of the inevitable variation in extent and excellence of preliminary preparation, the medical schools, as a rule, give their own premedical work. By intensive methods they may compress into about six months the required work, which is entirely in physics, chemistry and biology." Although the usual duration of medical education in England is five years, Dawson states that there is no upper time limit on the medical course. Davison[4] is another who advocates "taking them earlier" but he does not propose that the medical school take over the premedical instruction.

As regards "keeping them longer" such is now the practice in several of the European countries. There is no doubt that the Council on Medical Education and Hospitals has carefully considered the pros and cons of the desirability of lengthening the duration of the course in American medical schools. I am not aware that they have published any statements in favor of such a change. K. M. Lynch[7] writes strongly in favor of lengthening the course in medical education.

However, as has been suggested in this paper, if a medical school elects to try the suggestion, i. e., that of taking over the premedical instruction and limits it to a maximum of two years, it is possible to add some time to the study of medicine without increasing the present average age of the graduates. Much that is pertinent to "keeping them longer" is contingent on "taking them earlier."

Some schools are abolishing the long summer vacation. Opinion is not unanimous in favor of this change. Lynch would retain the present summer vacation; perhaps it gives the medical student more opportunity to mix with the outside world and become less narrow in his

6. Dawson, W. T.: Medical Education in England, J. Assoc. Am. M. Colleges, 5:225, (July) 1930.

7. The Desirable Medical Student, Southern M. J., 22:904 (Oct.) 1929; Abstr. in J. Assoc. Am. M. Colleges, 5:61, (Jan.) 1930.

thought and ways. This may have some bearing on the acquiring of those qualities ascribed to culture. There is also reason for giving much thought to the erection and proper conduction of suitable dormitories for medical students. Lord Moynihan[8] recently said: "Above all things, it is the clash of one mind against another, the impact of one temperament against another, which does more good than all the other things in a university education, and that is all that a hall of residence provides." If according to the proposed taking over of the premedical education medical students are deprived of those things gained by a college education, is it not possible that residence in a dormitory for the medical school offers something to offset the loss from not going to college?

These latter two matters may appear extraneous to this paper and yet it is my opinion that they are related to the subject.

## Summary and Conclusions

It is suggested, first, that medical schools take over the premedical education of its students, and, second, that the medical course be lengthened.

The advantages and disadvantages of each are discussed; it is believed that the former outweigh the latter.

It is hoped that these suggestions will be given serious thought by medical educators and that some schools may decide to make a trial of these changes. As Fischer[9] has said, "Instead of so much or more uniformity we need more individuality and more internal courage in our medical schools."

8. London Letter, J. Am. M. Assn., 95:276, (July 26) 1930.
9. Fischer, M. H.: Teaching of Physiology, J. Assoc. Am. M. Colleges, 4:293, (Oct.) 1929.

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## Time of 1931 Meeting

At a meeting of the Executive Council held in Chicago recently, the results of the mail vote on time of meeting in New Orleans were announced as having been overwhelmingly in favor of November 30, December 1 and 2 (Monday, Tuesday and Wednesday). Therefore, this date was chosen by the Council.

The headquarters hotel is the Hotel Roosevelt. The management has volunteered to cooperate to make every one comfortable, and suggests that it would be well to make reservations early as one or more conventions are always being held in New Orleans during the winter months of the North, although the above dates have been open up to now.

Rates have been quoted as follows: Single rooms, $4 to $6 per day; double rooms, double bed, for two occupants, $6 and $7 per day; double rooms, twin beds, for two occupants, $8 and $9 per day (all rooms with bath). Facilities for holding committee meetings are offered and will be provided free.

The sessions will be held in the new Tulane Clinic Building, thus affording easy opportunity to inspect this marvelous structure.

Details as to luncheons, dinners, etc., will be given later. The program is completed and gives great promise of an especially good reception.

## Duke University

The application for membership of the School of Medicine of Duke University was submitted to the Executive Council at its February meeting, together with the report of the inspector, and was accepted. Authority for this action was given the Council by vote of the Association at the Denver (1930) meeting.

## Congress on Medical Education

The twenty-seventh annual congress on medical education and licensure was held in Chicago, February 16-18, 1931. The attendance was greater than it has been for a number of years owing to the inclusion in the group of the psychiatrists and the physiotherapists. The program was an excellent one and covered many topics of importance in various fields.

At the annual dinner given on the evening of the first day, Dr. Henry Christian, the speaker for the occasion, stated that returning to these meetings after an absence of approximately twenty years, he was astonished to find that the same subjects were being discussed now as then, with equal enthusiasm and with as little result. The doctor probably could have added that the reason for this is not a lack of topics for discussion but the changing personnel among those attending the meetings. Probably only a very few delegates who attended the first Congress in 1904 were present at the 1931 Congress.

However, passing from one section to the other it was evident that those in attendance were interested. Many fine papers were read and the discussion was spirited. Unfortunately, it is not possible to attend three meetings in widely separated rooms at the same time; thus it was not possible to hear many good

papers read. But they will no doubt be printed somewhere and can be read at leisure.

The discussions "entre nous" seem to add charm and zest to these congresses. Opportunity is given to greet friends who can be met only on such an occasion, and to talk over problems of mutual interest. Judging from appearances, there must have been many such problems.

The session devoted to mental hygiene was a most interesting one. The chairman of the Council on Medical Education, Dr. Ray Lyman Wilbur, read a paper which surely must have given much food for thought judging by the discussions of it held here and there, unofficially, throughout the duration of the Congress. The paper gives opportunity for much constructive effort on the part of those interested in health, education and economics.

The state board group seemed to have a most satisfactory meeting. All the sessions were well attended, and it was quite manifest that the Federation is entering on a program of "activity" instead of "talkivity." Dr. Harold Rypins, of the New York Board of Examiners, is the president for the coming year. T. J. Crowe of Texas is the new vice-president.

A new feature was the exhibit consisting of charts portraying facts of medical education, hospitals and licensure, and a live demonstration of the functioning of a physiotherapy department. It was a good meeting.

## Hospital Data

The issue of the Journal of the American Medical Association, March 28, 1931, presents the annual study made by the Council on Medical Education and Hospitals of the hospital situation for the current year.

It is impossible to do more than present some of the high lights of this study in the short review which because of lack of space in this JOURNAL must be made; and, no one engaged in this field should fail to read and familiarize himself with the huge amount of information contained in the original article. This is a most commendable piece of work, and it will, no doubt, meet with the appreciation and approbation of medical school administrators as well as of medical graduates who are seeking reliable information on internships and residencies.

It is stated that there are on the Council's list of approved hospitals, 6,719 institutions. To gain the total number of hospitals in existence, 540 nonapproved hospitals must be added, making 7,259 hospitals now in operation.

There are 955,869 beds in the approved hospitals in which the total number of bed days for their last fiscal year was 278,634,430. The bed capacity in the general hospitals was 371,609. The average number of patients was 240,384.

There were 561 hospitals for mental and nervous cases, with a rated capacity of 437,919 and, actually, 415,042 patients. It is interesting to note that 94.8 per cent of the beds available in these institutions were occupied as compared with 64.7 per cent in general hospitals.

Of these mental hospitals, 31 are affiliated with medical schools for teaching purposes, and 63 offer 302 approved residencies in psychiatry. Twenty-six general hospitals offer 108 additional approved residencies in psychiatry.

There are 151 maternity hospitals with a bed capacity of 6,527 and an average number of patients of 4,126, not including the babies.

The 664 hospitals approved for internship afford 5,584 internships. The number of graduates in medicine for 1930 was 4,565, making 1,019 approved internships in excess of the total number of medical graduates.

Some hospitals that are not suited for the general internship or fifth year in medicine offer residencies that afford educational opportunities for graduates who already have had their general internship.

## What Osler Said in 1896

The seventh annual meeting of the Association of American Medical Colleges was held in Atlanta, Georgia, May 4, 1896, under the presidency of (then) Dr. William Osler, representing Johns Hopkins University School of Medicine.

In his presidential address Dr. Osler said: "The next radical change to be effected in the curriculum is an enormous extension of the clinical work, and the substitution in the third and fourth years of daily, personal contact with the sick for much of the present didactic work."

That was said thirty-five years ago but only now is heed being given to the needs of clinical teaching as outlined by Osler. Verily, there is nothing new under the sun.

## What Seth Low Said in 1894*

In his annual report as president of Columbia University made to the trustees of that university in 1894, Mr. Low said regarding teaching in medicine:

"The faculty of medicine have given much time and thought during the year to the development of the fourth year curriculum. As finally adopted, it is notable for two things: for the great increase of clinical instruction available to the students in small groups, and for the introduction of elective courses in the fourth year. The subjects offered among which such election has been made include some branches not distinctly medical in character; as, for instance, physics, philosophy and psychology. Instruction in pure physics is to be given in the physical laboratory of the university."

Doubtless, Mr. Low was not thinking of biophysics nor of present "premedical" requirements, but he apparently was convinced that physics and philosophy and psychology have a place in the preparatory education of the future physician. Thirty-seven years after he made his statement, psychology is still only being recommended as valuable in the preparation for medicine; biophysics is still aborning as a part of premedical work, and philosophy, well, it is not even given mention, although so-called "cultural" education (versus, scientific education) has been revived as a preparation for medicine.

*Bull. Am. Acad. Med., February, 1895, p. 711.

## Welch and Howell Retire

In June there will pass out of the sphere of medical teaching activities two men who have contributed much to scientific medicine and who played a large part in the progression and development of medical education and pedagogy: William H. Welch and William H. Howell, a pathologist and a physiologist—but humanitarians both.

Dr. Welch's retirement will mark the passing from active service at the Johns Hopkins University of the last of the "Big Four"—Osler, Halsted, Kelly and Welch—around whom its famous School of Medicine was built. He has been associated with the Johns Hopkins University Medical School for nearly fifty years.

In 1884 Dr. Welch occupied at the Hopkins the first American university chair in pathology and aided in launching the School of Medicine in 1893. He held the former post until 1917. He organized the School of Hygiene and Public Health in 1918 and was its director until 1926, when the Department of the History of Medicine was established and he was placed at its head. The medical school library was named in his honor.

Also a potent factor in the development of the School of Medicine was William H. Howell, noted physiologist and director of the School of Hygiene and Public Health. His retirement in June will bring to an end thirty-eight years of uninterrupted service at the university.

Dr. Howell succeeded Dr. Welch as director of the School of Hygiene and Public Health, even as in 1899 he had succeeded him as dean of the medical faculty, a post Dr. Howell held until 1911.

# College News

## University of California

The Ernest V. Cowell Memorial Hospital is completed. It is five stories high and incorporates an outpatient dispensary, administrative offices, laboratories and hospital. The students indicate in writing the service desired and the records of the complete physical examination given to all students on matriculation are dispatched to the physician's office to which the patients are assigned.

The two lower floors are devoted to administration, waiting and treatment rooms, laboratories and storage rooms. The three upper floors are for hospital purposes and have a capacity of 100 beds. There are eleven wards of four beds each.

The building is for sick students at the university, its objective being to show what can be accomplished by scientific preventive and curative medicine, and to reduce absenteeism from classes because of illness.

The Cowell Memorial Hospital was named in honor of an alumnus who willed a sum sufficient to pay for the greater part of the building. Dr. Robert T. Legge is the university physician. The professional staff consists of a medical director and twenty-eight physicians. During the fiscal year ended June 30, 1930, 70,824 dispensary treatments were given and 954 bed patients were confined to the hospital.

Summer courses for graduates will be offered from June 8 to 20. Dr. J. Homer Woolsey will be in charge.

Sanford Larkey, assistant professor of medical history and bibliography will attend the Second International Congress for the History of Science, in London, June 29 to July 5.

Dr. Larkey will present a paper before the congress on the subject of "A Critical Bibliography of Medical, Surgical and Biological Books Printed in England or English Before 1640."

## University of Texas Medical Branch

Correction: In the March issue of the JOURNAL it was announced that a department of physiological chemistry had been created. School authorities assert that this should have read "pathological chemistry."

## Temple University School of Medicine

John A. Kolmer has been appointed professor of immunology and chemotherapy.

## Medical College of Virginia

St. Philip Hospital Postgraduate Clinic June 15-27, 1931.

Purpose and scope. To give intensive instruction for a two weeks' period to Negro physicians, primarily of Virginia, in the fields of medicine, pediatrics, obstetrics and surgery, as related to general practice. There will be lectures, demonstration of cases, and assignment of cases for study on the wards of the St. Philip Hospital. There will also be laboratory assignments daily. Saturday morning will be left open to cover the special problems of the physicians registered for the course. At this time certain of their own more difficult cases may be brought in for study and discussion. One public lecture during each week of the course will be given at night. The faculty will be composed of the regular staff of the Medical College of Virginia, except two special lecturers who will come from Howard University.

Registration the first year will be limited to twenty. Registration for the course will close June 1, 1931.

A fee of $10 will be charged for the course, this to be paid before matriculation is complete.

The St. Philip Hospital, a unit of the hospital division of the Medical College of Virginia, was opened in 1920. It is used exclusively for the care and treatment of Negro patients. The teaching wards accommodate 131 patients.

S. A. Mitchell, director of the Leander McCormick Observatory, University of Virginia, gave the second Stuart McGuire Lecture March 25, 1931. His subject was "Eclipse Hunting in the South Seas."

## Marquette University School of Medicine

New Policies: Subject System—In 1931-1932 the subject system replaces the class system. This decision is based on a familiar observation, namely, the mental differences between the two extremes of a class.

Orientation Conferences — Orientation conferences for freshmen and sophomores were introduced in the second semester of 1930-1931. These sessions are attended also by the faculty of the basic sciences. The directors are assigned from the clinical faculty. General plan: Definition of the subject, for example, "internal medicine"; listing of the principal conditions under the subject, with brief discussions; stressing the relationship between the subject and the basic sciences; special applications of the basic sciences to the subject. In some conferences the work is supplemented by lantern slides and motion pictures.

Medical Laboratories—Marquette's surgical laboratories were organized in 1916. Included in both third and fourth years, the work consists of study and experience in the application of the principles of surgery as a foundation for the superstructure of clinical surgery. Embodied in these laboratories are the following functions: the basic sciences applied, the fundamental and regional diseases of surgery, bandaging, splinting and the principles of operative surgery. In the new policy the total time formerly allotted to the surgical laboratories is now divided between them and the medical laboratories. Similarly to the functions of the surgical laboratories, the medical laboratories are concerned with laying the foundation for the superstructure of clinical medicine. Work of medical laboratories: Clinical anatomy, physiology, chemistry, pathology and bacteriology; physical examinations, with the students themselves the subjects; x-ray studies; electrocardiograph; blood pressure; blood circulation—diagnostic and therapeutic methods; lumbar and cisternal punctures; paracentesis of various cavities; the ordinary ophthalmis, nasal, aural, and oral examinations; other diagnostic tests and therapeutic procedures peculiar to medicine, which from time to time may be suggested by that department. Research is encouraged.

## Long Island College of Medicine

The newly equipped and rebuilt laboratories for clinical diagnosis and research in pathology, bacteriology, pharmacology and physiology were dedicated recently. Dr. John Osborn Polak, professor of obstetrics and gynecology in the college, donated $125,000 to defray the cost of remodeling and re-equipping.

These new laboratories adjoin the Hoagland Memorial and were formerly used for housing the nurses of the Long Island Hospital. The laboratory departments were formerly housed in the Polhemus Clinic Building. Anatomy remains in this building.

The Long Island College of Medicine was known until about June, 1930, as the Long Island College Hospital and was an integral part of the Long Island College Hospital corporation. It was re-

organized; has its own board of trustees; and has an assured perpetuity. The dean is Adam M. Miller; the associate dean is Frank L. Babbott, Jr. The latter is also a member of the Board of Trustees. He is the only physician on the board. It is largely through his efforts, and the assistance of the dean, that the present organization was effected.

## Vanderbilt University School of Medicine

George P. Minot, professor of medicine in Harvard Medical School, lectured here March 31 under the auspices of the Alpha Omega Alpha Society.

G. F. McCleary of the Ministry of Health of Great Britain lectured on "The Control of Narcotic Drug Addiction" April 24.

Chas. R. Stockard, professor of anatomy in Cornell University Medical School, delivered the Phi Beta Pi lecture April 16.

## University of Minnesota School of Medicine

The administration committee recently voted to give recognition to practitioners of medicine who give so freely of their time to teaching without receiving any monetary reward and, until now, not much of any other reward. It has been decided to use the terms clinical professor and clinical instructor in classifying the part-time teachers.

In the interests of teaching methods and especially in the field of bacteriology, attention is called to motion picture films made by Dr. Arthur T. Henrici, associate professor of bacteriology. Dr. Henrici has succeeded in photographing on a strip film the development of moulds and bacteria over a period of about twelve hours, taking a photograph every twenty seconds. The result is not only interesting but highly instructive.

Dr. J. C. Litzenberg, professor of obstetrics, has been elected a member of the American Gynecological Club, an organization of fifty members including leading specialists in that line of work.

On the newly formed American Board of Obstetrics and Gynecology (a committee of nine authorized by the large societies of these subjects to select men qualified for recognition as specialists) are J. C. Litzenberg, professor of obstetrics; Robert D. Massey, professor of obstetrics, Mayo Foundation; Fred L. Adair, formerly professor of obstetrics and gynecology here and now of the University of Chicago, is also a member of this Board.

## New York University

The Centennial Fund has received many contributions and bequests for the prevention and cure of pneumonia under the direction of Wm. H. Park. Mr. Lucius N. Littauer has given $10,000; the Commonwealth Fund, $3,750 for research to ascertain the value of antipneumonia serum treatment of bronchial pneumonia. $1,000 was given for general studies in the prevention and cure of pneumonia and $3,600 was given to the third medical division pneumonia fund under the direction of John Wyckoff.

## Jefferson Medical College

The late Dr. William J. Hamilton bequeathed $30,000 for the establishment of four scholarships for the education and maintenance of deserving young men with limited means.

## University of Mississippi School of Medicine

At a business meeting of the Council on Medical Education held February 15, it was voted that approval of this school be continued pending further developments.

It has been stated by many individuals, both in and out of the profession, and organizations that the existing conditions at the University, the result of the un-

warranted action of the governor and board of trustees taken last June, will be remedied early in 1932 when a new governor and a new legislature will be in office. The welfare of the university and other state institutions of education will be the outstanding topic for consideration and it is believed that education in Mississippi will be divorced from politics for all time.

Many changes have been made in the medical school since last year. The medical profession of the state is solidly behind the school now.

## University of Michigan Medical School

Norman F. Miller, professor of obstetrics and gynecology at the State University of Iowa School of Medicine, Iowa City, since 1926, has been named professor of obstetrics and gynecology and Bates professor of diseases of women and children to succeed Reuben Peterson resigned. Fred Jenner Hodges, lecturer in radiology, University of Wisconsin Medical School, Madison, was appointed professor of roentgenology to succeed the late Preston M. Hickey.

## University of Vermont College of Medicine

The eligibility of an applicant for enrollment in the Freshman Class is determined by a committee of the faculty of the college of medicine and the registrar of the university, and is based on: (1) the grades earned by the applicant in his premedical course; (2) the score earned in the Aptitude Test, adopted by the Association of American Medical Colleges; (3) the personality and general fitness of the applicant for the study of medicine, as determined by a personal interview with the above named committee.

The meeting of the applicants with the committee will be announced by the registrar, and the date fixed as early as possible after the premedical grades are received.

## University of Illinois College of Medicine

The Charles S. Bacon lectures were delivered by Herbert A. Evans, professor of anatomy in the University of California. His topics were: "The Hormones of the Hypophysis" and "The Relation of the Hypophysis to the Reproduction System."

A copy of volume I of the Medical Repository, which appeared in 1798 and which was the first American medical journal, is among the exhibits at the library in a display of early medical Americana. There is also a collection of the writings of Benjamin Rush, an autographed copy of a work by Marion Sims, and a copy of the first medical dictionary compiled by an American and Beaumont's book on digestion. Photographs of men famous in the medical history of the United States are also included.

## College of Medical Evangelists

The third annual series of medical lectures under the Benton N. Colver Lectureship were delivered by H. Gideon Wells, professor of pathology in the University of Chicago, last February.

## Loyola University School of Medicine

Reverend Patrick J. Mahan, for many years regent of the school, has been appointed president of Creighton University, Omaha, Nebraska, succeeding the late Father Agnew who died in February. Reverend Terrence A. Ahearn, formerly regent of Creighton Medical School, will succeed Father Mahan as regent at Loyola.

## University of Cincinnati College of Medicine

Donald Lyle has been appointed an instructor in anatomy in order to give him an official status. He has heretofore been a volunteer worker in the field of ophthalmology.

George J. Heuer will not leave July first to assume his duties at Cornell as previously announced. He will remain at Cincinnati until July, 1932.

Mont R. Reid, associate professor of surgery, has been appointed acting head of the department.

## Columbia University

Announcement has been made that gifts amounting to a total of $46,623.35 have been received from various donors. The Carnegie Corporation gave $10,000 for support of the Pawling Research in nerve anastomosis at the Neurological Institute; $10,000 came from an anonymous donor for the work of the Cancer Research Institute under the direction of Dr. F. C. Wood; the National Research Council gave $1,567.58 for special research in the department of anatomy; Mrs. S. W. Adler gave $1,000 to the Adler Fund in the medical school; John W. Wheeler gave $1,000 for research in the department of ophthalmology and $1,000 was received from the American Academy of Ophthalmology and Otolaryngology for the same purpose; Alfred F. Hess gave $575 to the Nutritional Research Fund in the department of pathology; the National Tuberculosis Association gave $509.12 for medical research and M. Allen Starr made a donation to the fund bearing his name in the department of neurology.

## University of Southern California School of Medicine

At its business meeting, held in February, the Council on Medical Education of the American Medical Association, voted not to approve of this school, therefore its students cannot be given recognition for time spent there, or work done. Elsewhere notice is given that William D. Cutter is no longer dean of the school, his views and high ideals of what a medical school should be not having met with the approval of the president and board of trustees of the university.

## Hahnemann Medical College

It is reported that $100,000 has been received outright and $10,000 for endowing beds by the will of the late Miss Fanny Shortridge.

## Louisiana State University Medical School

Announcement has already been made of the organization of this new medical school, two years to be given on the university campus at Baton Rouge and two years in New Orleans with the Charite Hospital as the center.

Additional information is given that Dr. Arthur Vidrine, superintendent of the Charite Hospital has been appointed dean. A medical building which will harbor class rooms, laboratories and offices for the two clinical years is to be constructed on the Charite Hospital grounds. It is planned to begin construction not later than April 1, 1931 and that instruction will begin in the Fall of the year. An internship will be required for graduation.

An advisory directorate consists of James T. Nix, New Orleans, who also will be head of the department of surgery in the Postgraduate School of Medicine, A. A. Herrold, of Shreveport and D. C. Iles, of Lake Charles.

The dean, Dr. Vidrine, has announced that the new school will not interfere with the Tulane University School of Medicine in carrying on its clinical instruction in the Charite Hospital as there is sufficient teaching material for both institutions.

Aristides Agramonte, professor in the

medical faculty of the University of Havana, has accepted the professorship of tropical medicine. Henry N. Blum is head of the department of ophthalmology, Jos. N. Rousel, of dermatology; Pierre J. Kahle, urology; Phillips J. Carter, obstetrics; Russell E. Stone, surgery; Homer J. Dupuy, Jr., otolaryngology; Amedee Granger, radiology.

## New York Homeopathic Medical School

The death of Miss Ella Virginia Von E. Wendel has made available the great Wendel fortune for charity and education. The Flower Hospital of the New York Homeopathic Medical College and Flower Hospital is one of the five institutions to receive a major share of the estate.

The Flower Hospital is a chartered part of the New York Homeopathic Medical College and Flower Hospital and provides a major unit of the clinical teaching material for the college.

The hospital receives by the will of Miss Wendel 17.5 per cent of the estate which is estimated at $100,000,000.

The Wendel family has been contributors to this institution for nearly fifty years. Six ward beds and a two bed room, totaling $60,000 have been gifts through the years. In 1919, Miss Georgiana Wendel made a special gift of $5,000 to the college.

## University of Arkansas School of Medicine

A recent appropriation made by the legislature to the university includes an item of $275,000 for a new laboratory building for the medical school.

## Boston University School of Medicine

Professor J. LeRoy Conel, professor of anatomy, has the only known collection of embryos representing to medical research the lowest construction from which the human brain has been evolved, approximately one hundred specimens of Bdellostoma (sea eel) eggs. This collection is being used in the study of the development of the internal structure of the brain. The five parts, with the same functions as are found in the fully developed human brain, even the beginning of a cortical system, are present in this eel.

Dr. Conel has devised a fishing system of his own to catch this eel, and has succeeded in discovering where and how to collect the eggs. Out of 400 eggs which resulted from his last summer's work, Dr. Conel secured about 100 eggs which were fertilized and therefore useful for his investigations.

This is the only known collection of its kind in the world.

## Tufts College Medical School

In January the corner stone was laid for the New England Medical Center in which this medical school, the Boston Floating Hospital and the Boston Dispensary will cooperate. The Center, when completed, will have three buildings: The Jackson Memorial Building of the Boston Floating Hospital, the Center building for clinics and quarters for nurses and the dispensary building.

## Duke University School of Medicine

A portrait of Dr. William Stewart Halstead, until 1922 professor of surgery in the Johns Hopkins University School of Medicine, has been presented by Dr. Halstead's family to the school and hospital. One of the surgical wards of the hospital is named Halstead Hall.

# General News

## School of Tropical Medicine, Porto Rico

This institution has received a grant of $36,000, extending over a period of four years for the study of nutrition in Porto Rico. The work will be under the direction of Professor Henry C. Sherman, biochemist, of Columbia University, New York.

## Institute for the History of Medicine

Prof. Dr. Paul Diepgen, the medical historian, who was called from Freiburg to Berlin, about a year ago, spoke recently before the Berliner Gesellschaft für Geschichte der Naturwissenschaften, Medizin und Technik, on the aims and tasks of the new instiute for the history of medicine and the natural sciences, the erection, equipment and direction of which he took over on assuming his present post.

The institute has a suite of twenty-five rooms in a former bank building. The chief equipment consists naturally of the library treasures, which are, in part, so valuable that they are preserved in a special depository left by the bank. At present, the library comprises 10,000 volumes; in addition, there is a special pharmaceutic collection of 2,000 pieces. A larger seminar room, which is well adapted for lectures, serves for the present as a reading room for the students. Then there are work rooms for the director, four assistants and other auxiliary personnel. The reading room, as well as the whole institute, will be open until a late hour. It is planned to organize the service so that the institute, by means of its comprehensive card filing system, will furnish information at any time on the existing literature in this particular specialty; in other words, a scientific source of information on a large scale. The principal task of the institute will be to instruct the students as to the importance of the problems of the history of medicine for the understanding of the medicine of the present day and to guide them in the making of independent researches in old documents, which has already led to historically important discoveries. At present, the institute is engaged in collecting material for the publication of an atlas of the history of medicine and of studies on Arabian medicine, in which latter task the orientalists of the university will cooperate. (Berlin Letter, *J.A.M.A.*, Feb. 21, 1931).

## Cost of Medical Study in Germany

*Der deutsche Hochschulführer,* which is published by the students' association, estimates the approximate cost of medical study, including the cost of living, at 8,600 marks ($2,046). This estimate allows from 190 to 220 marks for dues and tuition per semester for the five preclinical semesters and from 280 to 310 marks for the six clinical semesters. (Berlin Letter, *J.A.M.A.*, Feb. 28, 1931.)

## McMillan Hospital and Oscar Johnson Institute of Washington University

The newly erected $1,500,000, fourteen story building was opened in January. A bequest of about $1,200,000 to the university from the late Mrs. William McMillan, St. Louis, for an eye, ear, nose and throat hospital and a gift of $650,000 from Mrs. Oscar Johnson, her sons and two friends in memory of Mr. Johnson, and other gifts brought the McMillan fund to $1,500,000, thus providing also for an endowment.

On the first and ground floors are eye, ear, nose and throat clinics, administration offices, kitchen and service rooms. The second floor has six operating rooms, an auditorium seating 120 persons, a conference room and locker rooms for visiting physicians, nurses and medical social workers. The next five stories provide 150 beds for private and semi-private patients of the full-time and visiting staffs, for Negro patients, white ward patients and for the care and study of infectious diseases of the eye, ear, nose and throat.

The six upper floors will house the Oscar Johnson Institute for research and teaching ophthalmology and otolaryngology. Full-time departments in these subjects are financed by a grant from the General Education Board of the Rockefeller Foundation. One floor is devoted to research in physics and physiology as applied to ophthalmology and otolaryngology. Three other floors planned for research in chemistry and bacteriology will be immediately put to use by a grant of $50,000 a year, for a period of five years, by the Commonwealth Fund for a comprehensive investigation of trachoma. A roof garden furnishes recreational facilities for the staff, and a sun parlor for the patients.

The following appointments, among others, are listed: C. C. Bunch, Ph. D., professor of applied physics, department of otolaryngology; William F. Wenner, Ph. D., instructor in otolaryngology; George Holman Bishop, Ph. D., professor of applied physiology, department of ophthalmology; Dr. Percy Wells Cobb, associate professor of applied physics (ophthalmic staff); Dr. Harvey D. Lamb, assistant professor of ophthalmic pathology; Dr. Lee Wallace Dean, head of the department of otolaryngology; Louis A. Julianelle, Ph. D., associate professor of applied bacteriology and immunology, department of ophthalmology; R. Wendell Harrison, M. S., instructor in applied bacteriology and immunology; James A. Hawkins, Sc. D., associate professor of applied biochemistry in ophthalmology, and Alfred M. Lucas, assistant professor of cytology in otolaryngology. Rossleene A. Hetler, Ph. D., will have charge of the chemical studies of vitamin and food deficiencies and of the allergies in relation to eye diseases. Dr. Harvey J. Howard will direct research in ophthalmology, and Dr. Lee Wallace Dean, research in otolaryngology.

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## The Public Needs Many Doctors and Only a Few Specialists

The trend of modern medical education has left its mark upon the younger generation of doctors, in that these younger men forget that the routine of life lies in small things. More than 75 per cent of human ailments are to be classed accurately as temporary trivialities. Now these younger doctors, for the most part, have ambitious eyes fixed upon the great moments of medicine with almost complete disregard of the everlasting minorities. Intent upon hopes of the critical laparotomy, or other serious surgical operation, idealistic young physicians are prone to neglect the every day need of the ailing public. And right here is the loophole through which the bogus practitioner creeps to find the foothold by which he sometimes dislodges and supersedes the skilled man. We are educating specialists, and not doctors. The public needs many doctors and only a few specialists.

Out of the inattention of scientific men for ordinary wants of an indisposed people, spring and flourish the mass of cults and of mock medical systems that insidiously deprives the sick of the available expert medical attention. In other words, it is the seeming indifference of physicians toward the annoying ailments of prevalence and frequency that forces the people to seek care and a sympathetic ear from the pseudists.

Powerful appeal of the false healers is the seeming shrewd fashion in which

these dispensers of bunk appear to take the patients into the full confidence of their supposedly wonderful systems. The subtlety of this suggestion to personal vanity is incalculable. (*Illinois M. J.*, December, 1930).

## Coordination of Medicine and Dentistry at Yale

Dr. Milton C. Winternitz, dean, Yale University School of Medicine, discussed the school's plan to promote the integration of dentistry and medicine, February 4, before the New Haven Dental Association. There are now four graduate dentists taking the regular course in medicine at Yale, and each year two such dentists are to be admitted, so that eventually there will be at all times eight dentists taking the course. B. G. Anderson, D. D. S., formerly associated with the University of Minnesota, Columbia University and Peiping Union Medical College as dental surgeon, has been appointed to head the clinical activities in dentistry at Yale. He will be in charge of the dental suite in which dental work for ambulatory and hospital patients unable to pay will be conducted. An investigation, supported by the Rockefeller Foundation, is being made of the teeth and bacteria found at their roots in relation to both acute and chronic diseases. An endeavor is being made to discover why extraction of the teeth often alleviates diseases of the joints, heart, kidneys and eyes, and to determine the significance of devitalized teeth, of bacteria associated with them, and of the destruction of the tissues forming the bed of the tooth. The plan, it is hoped, will create a liaison group which will draw physicians and dentists together to their mutual advantage.

## Graduate Teaching in London

In recent years the facilities for graduate teaching in London have constantly increased. The Fellowship of Medicine and Post-Graduate Association provides intensive courses at various hospitals in general and special branches of medicine and surgery. The West London and the Prince of Wales general hospitals are really graduate colleges and most of the special hospitals have courses of lectures and demonstrations for graduates. A new postgraduate hospital and medical school is being formed at Hammersmith under the control of the leaders of the profession and with a large government grant, which will centralize in a way never before possible the graduate teaching of the metropolis. The absence of centralization, compared with centers such as Berlin and Vienna, has always been the complaint of foreign graduates who came to London to attend clinics of famous teachers. They found these men distributed over the dozen general hospitals attached to medical schools and double that number of special hospitals, which are scattered over this vast metropolis often many miles from one another. At the new postgraduate hospital, in connection with which there will also be a hostel, most of them will probably teach.

The large general hospitals of London are mainly devoted to the teaching of students but in recent years have begun to provide postgraduate teaching. In some this is confined to annual courses for old students, but St. Mary's and Charing Cross hospitals have at the beginning of the medical session a week-end course of about a dozen lectures on practical subjects, which are open to all physicians. The latest innovation is a course of Sunday lectures to be given at Charing Cross Hospital, January 18-March 22. The success of the graduate course arranged by the staff of the hospital, primarily for the benefit of its old students, has induced them to organize a similar course for the graduates from all hospitals. There will be a fee of $5 to cover printing and sundry expenses.

The lectures, of which there will be two each Sunday, at 10:30 and 11:45 a. m., are of a practical nature and include such subjects as diagnosis and treatment of urinary infections, antenatal care of expectant mothers, old and new remedies in cardiovascular diseases, recent advances in surgery, early diagnosis of common organic nervous diseases, and failing sight in old age. Two of the lectures present a novelty, as physicians are asked to send in the written questions beforehand. These lectures will cover questions and answers in relation to diseases of the ear and surgical questions and answers. (*J.A.M.A.*, Jan. 31, 1931).

## American Board of Obstetrics and Gynecology

This board, composed of nine members and examiners, elected by the American Association of Obstetricians, Gynecologists and Abdominal Surgeons, the American Gynecological Society, and the Section on Obstetrics, Gynecology and Abdominal Surgery of The American Medical Association, was formally organized in Niagara Falls, Sept. 16, 1930. The function of the board is to grant certificates indicating proficiency and specialization in obstetrics or gynecology, or both, to those who comply with its requirements.

The nine members of the board are: Walter T. Dannreuther, New York City; Fred L. Adair, Chicago; E. A. Schumann, Philadelphia; Paul Titus, Pittsburgh; Joseph L. Baer, Chicago; Jennings C. Litzenberg, Minneapolis; Robert D. Mussey, Rochester, Minn.; E. D. Plass, Iowa City, Iowa, and G. D. Royston, St. Louis.

This board will aim to improve the standards of practice of obstetrics and gynecology. It expects to accomplish this by various activities, such as the investigation and encouragement of graduate extension study facilities and active clinical assistantships for men desiring to specialize in these branches, and it will endeavor by regular examinations to determine the competence of specialists in obstetrics and gynecology who apply for the certificate. Certain outstanding specialists will be granted certificates on the basis of their attainments alone, but only by a vote of the entire board after recommendation by the Committee on Requirements. A second group is asked to undergo a practical clinical examination, whereas a third and younger group has both written and clinical examination and must submit records of a group of cases in order to qualify.

The board does not intend in any way to interfere with or limit the professional activities of any duly licensed physician, but it does aim toward standardized qualifications for specialists in obstetrics and gynecology. Any well qualified obstetrician and gynecologist should have no difficulty in obtaining a certificate and the board is desirous of receiving applications from those to whom this applies. The first examintion was held simultaneously in nineteen different cities of this country and Canada on March 14, 1931.

Detailed information and application blanks may be secured from Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh, Penna.

## Guggenheim Foundation Latin-American Fellowship

Edwardo B. Montero, of the School of Medicine of the University of Chile, has been given a Latin-American Fellowship by the Foundation. He will make studies in the physiology of certain glands of internal secretion at Harvard University.

## University of Cambridge

This institution will discontinue the award of diplomas in public health, hygiene, and tropical medicine and hygiene when the present courses end. Further candidates for these diplomas will not be accepted.

## Yale University

William W. Hawkes, M. D., of Connecticut, an alumnus of the medical school, bequeathed $577,732 to the university. The income will provide scholarships for students of American ancestry.

## Welsh National School of Medicine

In future a medical student entering the university may go to any one of four constituent colleges for the first year of scientific study. The second and third years for anatomy and physiology are to be supervised by a neutral body formed by representatives from the university college and the medical school. The medical school proper takes charge of the next three years, the clinical years, which are given at Cardiff. However, this clinical work may be done elsewhere, hence many students go to London hospitals. In fact, a medical graduate of the University of Wales may never have been a student in its medical school. The school is a corporate body in the university, but is something less than a college and something greater than a faculty.

## Federation of State Medical Boards

There is general recognition of the wise step taken by the Federation in accepting the standards of the Association of American Medical Colleges as qualification for the degree of Bachelor or Doctor of Medicine.

The Federation at its executive session adopted a definite policy in regard to basic science examinations. It maintained that graduates of class A medical schools having membership in the Association of American Medical Colleges should not be required to take the basic science examination in the state where application for licensure is made. While recognizing that basic science legislation has a purpose in those states having composite boards of examiners, there is no justice in unnecessarily penalizing the well trained medical graduate by this extra test. (*Federation Bull.*, March 1931).

Dr. Harold Rypins, secretary of the Board of Medical Examiners of the State of New York, is the new president of the Federation; Dr. Thomas J. Crowe, of the Board of Medical Examiners of Texas, is president-elect. Dr. F. C. Warnshuis, secretary of the Michigan State Board of Registration in medicine, is vice-president, and Dr. Walter L. Bierring, of Des Moines, Iowa, is the secretary-treasurer.

## Cancer Research

A trust fund in perpetuity totaling $1,500,000 for alleviation of suffering from disease and especially for the control of cancer was created in the will of the late Egbert C. Fuller who died in Branford, Connecticut in March.

## Postgraduate Courses in Paris

The Faculty of Medicine of Paris (The Medical School of the University) announces that, during June and July, 1931, a comprehensive series of postgraduate courses will be presented. The enterprise is conducted under the auspices of the Association for the Development of Medical Relations (the "A.D.R.M.") a commission sponsored by the French Government.

The work will be presented in the English language. Clinics, lectures and demonstrations will be conducted in the hospitals of Paris, on a wide variety of topics, by the most eminent French clinicians. A nominal fee will be charged for each course. Upon the completion of each course, the student who qualifies will receive a certificate covering the work, signed by the professor in charge.

Detailed information may be secured by addressing direct, Professeur E. Hartmann, President, "A.D.R.M.", Faculty of

Medicine of Paris, 12, Rue de L'Ecole de Medicine, Paris (6e) or, in the United States, Doctor Frank Smithies, 920 North Michigan Avenue, Chicago, Illinois.

## Fund for Research in Hematology

Mr. Mark Finston, of Tulsa, Oklahoma, recently provided a fund at St. John's Hospital, Tulsa, for research work in hematology. The size of the fund is not reported and it has been reported that additions to it will be made as needs require. It will be used to study blood changes in various diseases and to work out specific problems in the blood dyscrasies.

## Urusuvati Himalayan Research Institute of the Roerich Museum

This institute proposes to conduct original scientific research in various fields of arts and sciences. It consists of the following research departments: Archaeology, related sciences and arts; natural sciences and applied research; research library and museum.

One of the main objects of the Institute is to preserve and record the rapidly vanishing folklore knowledge, and to provide American and European scholars with a possibility of field-work in India and other regions of the Middle East.

The department of natural sciences will conduct original investigations in the different branches of natural sciences. It also intends to establish a Biological Research Laboratory to study biological problems in the Himalayan region. This section of the department will devote itself to the study of ancient Indian medicine and physiology with the object of investigating its attainments in the light of modern research.

One of the first projects to be inaugurated will be a plantation of medicinal plants with a Research Laboratory.

The present headquarters of the institute are at Naggar in the Kulu Valley in the Western Himalayas. Besides the paid members, the Institute will have corresponding associate members. Provision will be made to give possibilities of scientific work to research students, holders of traveling and research scholarships from American and European scientific institutions.

The Institute will publish a quarterly bulletin of its activities in which each department will have its section. In addition to the bulletin, the Institute will from time to time publish works of outstanding importance by honorary advisers and members of the Institute.

Besides an annual grant from the Roerich Museum, the Institute is financed by private donations. The following classes of membership are opened for the public: Patrons, $10,000; donors, $5,000; sustaining member, $1,000; life member, $500 and annual member, $25. The director is George N. Roerich. The New York office is at 310 Riverside Drive, New York City.

## Twentieth Century Fund

This fund is interested primarily in support of improved methods of economic organization and technique. This present program is based primarily on the assumption that better economic conditions will benefit business, labor and the public at large.

In connection with its present program the fund has for the past few years contributed to the support of the committee on the costs of medical care and at the present time is interested further in the practicability of "Medical Guilds." To that end it has on its immediate list of projects the raising of funds for the establishment of such a guild in New York City if that seems advisable.

The president of the fund is Edward A. Filene; the director is Evans Clark. The office of the fund is located at 11 West 42nd street, New York City.

# Personals

Franz Alexander of the University of Chicago, delivered the fourth Harvey Society lecture at the New York Academy of Medicine, January 15. His subject was Psycho-analysis and Medicine.

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H. T. Karsner, professor of pathology in Western Reserve University School of Medicine, was elected vice-president of the American Association for the Advancement of Science from Section N (Medical Section) at the annual meeting held last December.

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William H. Welch, Johns Hopkins University, was the guest of honor at a dinner given in Baltimore recently and was presented with a specially bound copy of a memorial volume recounting the world wide celebration of his 80th birthday and other gifts of affection.

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Malcolm H. Soule, of the Hygienic Laboratory of the University of Michigan, and Ernest C. Faust of Tulane University Medical School, visited the School of Tropical Medicine at San Juan, P. R. recently.

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William J. Kerr, professor of medicine in the University of California Medical School, spoke before the Portland Academy of Medicine (Oregon) and the King County Medical Society (Seattle) in February. The subject of his talks was "Recent Experimental Studies on the Peripheral Circulation with Special Reference to Raynaud's Disease."

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Henry Schmitz, professor of gynecology, Loyola School of Medicine, received the gold medal of the Radiological Society of North America for 1930, for achievement in the science of radiology in its application to diseases of women.

Frederick Carpenter Irving has been appointed professor of obstetrics at Harvard University Medical School, effective September 1.

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Francis Bayard Carter, professor of obstetrics and gynecology in the Department of Medicine of the University of Virginia, has accepted a similar appointment in the School of Medicine of Duke University, effective July 1.

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Stephen Rushmore, for many years dean of the Tufts College School of Medicine has been appointed a member of the Massachusetts Board of Registration in Medicine.

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Alfred C. Redfield, professor of physiology in Harvard University, delivered a series of lectures in March at Belgian universities under the auspices of the C.R.B. Educational Foundation.

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David Starr Jordan, chancellor emeritus of Stanford University, celebrated his eightieth birthday January 19. As an expression of appreciation, faculty, alumni and friends presented the "Jordan Room," his former office in the zoology building, suitably furnished, as a place for him to study. An oak tree was planted by students in Danville, at the foot of Mount Diablo, as an expression of the strength manifested in Dr. Jordan's life.

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Wade Hampton Frost, professor of epidemiology, has been appointed the first dean of the Johns Hopkins University School of Hygiene and Public Health. He will assume his new duties on July first when the present director, William H. Howell, retires. The appointment is for three years and specifies ineligibility to succession.

The degree of D. Sc. was conferred on George E. Coghill, of the Wistar Institute of Anatomy and Biology by the University of Pittsburgh.

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Daniel F. Cappell, lecturer in pathologic histology in the University of Glasgow, has been appointed professor of pathology in the University of St. Andrews, succeeding Professor Sutherland, retired. Dr. Cappell is also the recipient of a Bellahouston gold medal.

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Ernest E. Irons, dean of Rush Medical College, recently addressed the Buffalo Academy of Medicine on the subject of facts and fallacies concerning protein therapy.

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John B. Dec. Saunders, of the University of Edinburgh, has been appointed assistant professor of anatomy in the University of California School of Medicine.

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Franz von Groer, director of the department of pediatrics in the University of Lemberg, Poland, is a visiting professor at the University of Illinois College of Medicine under the Theodore B. Sachs Memorial Fellowship which was established through a grant from the Chicago Tuberculosis Institute. Dr. Groer will also lecture at the Universities of Michigan, Cincinnati, Western Reserve, Iowa, Colorado and various medical centers.

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Elexious T. Bell, professor of pathology, University of Minnesota Medical School, delivered the Noble Wiley Jones lectures under the auspices of the University of Oregon Medical School, March 4-6. His subject was diseases of the kidney.

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John Chalmers DaCosta, Samuel D. Gross professor of surgery in Jefferson Medical College as part of the first observance of DaCosta Day by the Philadelphia County Medical Society, reviewed his experiences during forty years of active work in surgery. This celebration also inaugurated the establishment of the John Chalmers DaCosta Foundation for the purpose of furthering postgraduate teaching.

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Emery R. Hayhurst, professor of public health and hygiene in Ohio State University College of Medicine, has resigned. He will develop his consulting work in public health matters.

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L. A. Mitchell, director of the Leander McCormick observatory of the University of Virginia, delivered the second Stuart McGuire lecture at the Medical College of Virginia.

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James B. Herrick, emeritus professor of medicine in Rush Medical College, delivered the sixth Harvey Society lecture at the New York Academy of Medicine. His subject was "The Coronary Artery in Health and Disease."

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James C. Egbert, president of the Long Island College of Medicine, has resigned. He continues his connection with the Extension Department of Columbia University.

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Frederick G. Novy, professor of bacteriology in the Medical School of the University of Michigan, delivered the annual George M. Kober lecture at Georgetown University. His subject was "respiration of Micro-Organisms."

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A. C. Ivy, professor of physiology in Northwestern University Medical School, will address the Illinois State Academy of Science May 8.

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Konrad E. Birkhaug, associate professor of bacteriology at the University of Rochester School of Medicine and Dentistry, has been elected a member of the Norwegian Academy of Sciences.

Karl F. Meyer, director of the George W. Hooper Foundation for Medical Research, University of California, delivered the seventh Ludvig Hektoen lecture of the Billings Foundation before the Chicago Institute of Medicine.

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A sound film of John J. Abel of Johns Hopkins University School of Medicine, lecturing on the relation of pharmacology to medicine, is being made under the auspices of the Chemical Foundation of New York and Johns Hopkins University.

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John F. Fulton, professor of physiology in Yale University, delivered two lectures at the University of Minnesota Medical School, March 31 and April 2, on some experimental studies on the brain.

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William W. Cort, professor of helminthology in Johns Hopkins University Medical School, will be a member of the staff of the Douglas Lake Biological Station of the University of Michigan this summer.

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George R. Bancroft, of the School of Medicine of West Virginia, has been appointed professor of physiological chemistry at Jefferson Medical School.

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E. A. Alderman, president of the University of Virginia, will deliver the principal address at the inauguration of Harry W. Chase as president of the University of Illinois.

Richard V. Lamar, professor of pathology and bacteriology in the School of Medicine of the University of Georgia, has resigned and accepted the position of pathologist in the state hospital at Nulledgeville.

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Jose Albert, professor and head of the department of pediatrics in the College of Medicine of the University of the Philippines, has donated his private library to the Bureau of Science Library. It consists of 125,000 volumes including 600 current medical periodicals and 16,000 books and pamphlets.

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W. H. Goodrich, dean of the School of Medicine of the University of Georgia, has resigned. He will retain his position as professor of gynecology.

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Wm. R. Morse, dean of the Medical School of West China University, Chengtu, Szechuan, visited the office of the Association recently.

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Dr. Cash, of Peking Union Medical College, has been appointed professor and head of the department of pathology in the School of Medicine of the University of Virginia. He succeeds the late Harry Marshall.

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Information regarding vacation cruises which may be taken after the New Orleans meeting will be published in the July issue of the JOURNAL.

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# Deaths

Charles G. Stockton, emeritus professor of medicine in the University of Buffalo School of Medicine, died of arteriosclerosis and rupture of an anenrysm of the abdominal aorta, aged 77.

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Harold E. Santee, professor of clinical surgery in Cornell University Medical College, died, aged 47.

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Pierce J. Dunphy, instructor in pediatrics in Tufts College Medical School, died of pneumonia, aged 39.

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George M. Golden, professor of medicine in Hahnemann Medical College, Philadelphia, died January 12, aged 54, of heart disease.

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Oscar Dowling, at one time a member of the faculty of Tulane University School of Medicine, was killed January 2, by a train aboard a ferry.

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Henry Leffmann, emeritus professor of chemistry and hygiene in the Woman's Medical College of Philadelphia and the Graduate School of Medicine of the University of Pennsylvania, died of carcinoma of the stomach, aged 83.

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John A. Foote, dean and professor of pediatrics in Georgetown University School of Medicine, Washington, D. C., died suddenly in April.

Jesse J. Cullings, formerly assistant professor of gynecology in the College of Medicine of the University of Tennessee, died in December, aged 46, of carcinoma of the bladder.

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Charles Krumwiede, professor of hygiene and bacteriology in New York University, died recently, aged 51.

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Charles G. Stockton, for many years professor of medicine in the Medical Department of the University of Buffalo, died in January, aged 77.

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Joseph P. Runyan, professor of clinical surgery in the University of Arkansas School of Medicine, died February 2, aged 62, of heart disease.

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George P. Dreyer, professor of physiology in the College of Medicine of the University of Illinois, died, aged 65.

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William Keiller, professor of anatomy and former dean of the School of Medicine of the University of Texas, died in February of heart disease and arteriosclerosis, aged 69.

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Charles R. Ball, once a member of the faculty of the University of Minnesota Medical School in the department of nervous and mental diseases, died in December, aged 63.

# Abstracts of Current Literature

## The Ideal Surgeon

The great danger with which surgery is today confronted is that its technical procedures are so easily learned, so frequently practised, and so amply rewarded that men who regard medicine as a commercial career can live prosperous lives without contributing a single fresh thought, the slightest modification of any known procedure, or the establishment of any new method, to Science or Art. The ideal surgeon is not merely one who operates, who carries out, perhaps with brilliant skill an operation, the necessity for which, or the scope of which is determined by another. He possesses a mind to discover and examine all the clinical features of a case with competence not less than that of a physician and with responsibility far greater, and then acts, when so required, not only as a therapeutic agent, but as one engaged in hominal research. The safe judicious surgeon who applies technical skill, prudence, and fine judgment to the relief of human suffering adds greatly to the repute of the profession and to the happiness of the world.—Lord Moynihan (*Lancet*, Oct. 11, 1930.)

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## Observation and Inference

The method of observation, the Hippocratic method, is in the development of mental processes necessarily the first to be acquired and applied. The making of observations is by no means a random or simple procedure. It would seem to be the clear, indeed the paramount, duty of the teachers of medicine to inculcate the virtues and to instruct in the methods of observation as the primary faculty required in students. After the facts have been freed from contamination and accurately observed they must be collected, their exact individual values appraised, contrasts or comparisons made, and the strict relation of each fact to others alongside it laid bare, uniformities revealed, harmonies discovered, and coordinations suggested. Hypotheses must be freely made and tested by further controlling observations or by experiment. Ideas must be encouraged to arrange themselves and to shape themselves anew in the observer's mind; yet no idea may be accepted which cannot be controlled by observation and experiment. Through observation and its auxiliary properties clarity, order and a singular felicity and coherence of all parts become apparent in a problem at first inchoate and bewildering. The Galenic method is ancillary to the Hippocratic method, or may even dominate it. The Galenic or experimental method depends on the observation of conditions after specific influence has been directly and consciously exerted on them by the investigator. Control is the essence of the difference in method. The Hippocratic method surveying a large field attempts to discover similarities, uniformities or discordances, to make comparisons and establish classifications through perception of common attributes, to reason from these, and so to establish general laws. The Galenic method sets up its own inquiries, reducing them in each individual example to the simplest terms in order to obtain an unequivocal reply. The mental qualities required in the investigator are those which the trained observer in the Hippocratic method possesses; although, owing to the comparative simplicity of the arranged inquiry, the same high demand is not always made on them after experiments begin. In the devising of apt experiment the highest qualities of imagination find abundant opportunity.

In both methods analysis and synthesis are necessary. While in the method of observation analysis predominates, it is in the methods of experiment that the isolated truths are disclosed which must lend themselves to synthesis. The act of comparing one observation with another requires analysis in greater degree than synthesis for its effective working.—Lord Moynihan (*Lancet*, Oct. 11, 1930.)

## Vocational Teaching in Clinical Surgery

The introduction of the vocational idea into clinical surgery, especially in those schools dependent largely on voluntary assistance aside from the endeavors of the salaried instructors, gives rise to many problems. For instance, shall vocational clinical teachers be allowed the privilege of consultation in the hospital and referred private practice, which does not remove them from the site of their major work? Should the answer be in the negative, it is essential to provide a salary which will enable the full-time man to live and raise his family on a plane corresponding to that adopted by his colleagues in active practice and teaching in their spare time as an avocation. This level but few schools would be able to maintain at the present time. Should the answer be in the affirmative, another problem arises, for the man with sufficient intelligence and training to hold a vocational position will attract referred work because of his ability and also from his former students as they enter practice. This can, and unquestionably does, cause friction between the vocational man and his avocational colleagues in that the latter feel that the former, by their position, are given an unjust advantage.

From the viewpoint of the student the introduction of vocational teaching in clinical surgery or medicine has advantages and, perhaps, some disadvantages. It is to the benefit of the student in that he always knows that the instructor is going to be present, thus eliminating those periods of unrest which arise when gaps occur due to the enforced absence of the avocational instructor. It has been my observation that the vocational teacher consistently and logically plans his courses, rather than lectures or talks extemporaneously from personal experience. On the other hand, some contend that the student loses by not having contact with the practitioner who has years of experience in private practice to enlighten his sayings. The answer to which is, that the development of teaching hospitals and the ever growing tendency for hospitalization of the sick has made the field of experience of the vocational teacher as wide or even wider than that of his colleague in private practice. The training of students, so far as their relationship to the patient is concerned, is entirely carried on in the clinics and wards of our hospitals. Thus, vocational or avocational teachers have equal opportunity to direct the attitude which a student develops toward his patient. Should there be a lack of training in the essentials necessary to handling patients the fault lies in the abandonment of the old apprentice system rather than in the failure of the vocational clinical teacher. Personally, I believe that unless a student has the inherent attributes of a gentleman, which are the ethical fundamentals required in practice, when he arrives at medical school no one is going to be able to instill those qualities into his consciousness during his technical course.—R. H. Chaney (*Southern Med. J.*, Oct. 1930.)

## The Full-Time Idea

The fundamental difficulty existing in medical education as well as in other lines of educational endeavor is that the remuneration offered in the field of teaching endeavor is still so much below that attainable in the corresponding non-teaching field by a man of sufficient intelligence and proper training as to be a handicap in attracting available material

into the teaching profession. No matter how intense the interest of an individual may be in teaching, unless he makes it his vocation rather than his avocation, his endeavor is doomed to failure, as the man engaged in an active practice must of necessity frequently neglect the demands of his students in responding to the cry of his patients. The problem of how the full-time teacher is to be incorporated into our existing educational system has not yet been solved. The selection of the man is less difficult than how he shall be fitted in after selection. The ideal situation is where the school is conducted entirely on a university basis with the entire teaching faculty on a full-time status. Close approximation of this ideal is evident in some schools and the productive output from these institutions in respect to quality of students and quality of scientific knowledge will be watched with ever-increasing interest by those interested in our medical educational problems. From the ideal condition all degrees of infiltration of the full-time idea exist, a single man as department head, a director and a few subordinate instructors, several subordinate instructors and the like. The degree of infiltration of the full-time idea seems to be largely dependent on the resources of the school, the greater the financial power the greater the prevalence of full-time teachers.—R. H. CHANEY (*Southern Med. J.*, Oct. 1930.)

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## The Duties of the Full-Time Teacher

I prefer to interpret full-time clinical teachers as those occupying pay positions with salaries sufficient to free them from the necessity of earning any part of their livelihood by doing outside work, without the right of accepting fees for professional services; with the understanding that the time and energy of these men, whether directed toward research, teaching or caring for patients, are not to be hampered by strict university regulations. I dare say it would be very unwise for the management to limit the teaching of full-time men to the study and the treatment of cases that happen to be on a free ward or in a free dispensary. We have long since realized that the passing on of the proper methods of handling private patients is by no means unessential in the training of our students. The art is rarely picked up or rarely cultivated in this restricted form of practice. It would be infinitely wiser to permit consultation and limit the private beds in a teaching hospital to this staff, especially should the bed space of the hospital be greatly sought by the non-pay members of the staff. Under this interpretation of full-time clinical teachers the question arises, where best can they be used? First and foremost we would say, as heads of major departments, for the reason that the success of a department depends largely on its head. The duties of this man are varied and more far reaching than those of similar positions in our medical organization. From the fact that medical schools, in addition to training physicians, are being used more and more by private hospitals in organizing and centralizing their work under combined hospital and university regulations, this man should have not only scholarship, research and administrative abilities, but he should be able to deal with his part-time and non-pay staff in a generous manner, and in addition he should possess a striking personality for meeting the public. Many of these qualifications are "born in a man and not made to order."

I am not convinced that all the key positions in a major clinical department should be occupied by full-time men, if suitable part-time men are available. This statement is made for the reason that, if full-time men occupy these positions, it would be humanly impossible to advance them as time goes by, either professionally or financially according to merits of attainment. The obvious

outcome is inevitable. On the other hand, every well organized department now-a-days turns out yearly resident physicians or instructors of three to four years' training in university work. Surely some of these men can do creditable research, supervise in dispensaries or routine laboratory procedures, demonstrate in clinical chemistry or assist in the roentgen department. The university profits no less financially by this arrangement than the community which is the recipient of high-grade medical service. These men, when given definite responsibilities, do not feel that they occupy an inferior position in the organization, nor do they censure the university for any financial shortcomings that may befall them from year to year.—J. W. MOORE (*Southern Med. J.*, Oct. 1930.)

## The Place of the Part-Time Teacher

The part-time teacher has some very definite contribution to bring to the teaching of the art of medicine. To this, if gained by experience in that proper laboratory, namely, the field of private practice, is to be added also the advantage offered by practitioners in specialized fields of endeavor. Practitioners in such specialized fields as ophthalmology, otolaryngology, dermatology, like those in even narrower fields such as cardiology, endocrinology and gastroenterology, have all something worth while to contribute from their accumulated experience, something which even equally mature men who have grown up only in the hospital and in the medical school have not had the opportunity to acquire.

There must always be among the part-time teachers those who are primarily teachers and practitioners only in a secondary sense and those on the other hand who are practitioners primarily and who devote only a minor portion of their time to teaching. Both of these types are of value in supplementing the full-time staff. There should be a constant stream of change and interchange in a department. Young assistants who, after their internship, have served a few years as full-time teachers, should be encouraged to try their wings in practice and to take on only part-time duties. More mature men who have kept abreast of the scientific progress of medicine and who have served as part-time teachers might after a while become full-time teachers. More mature full-time teachers, even heads of departments, as we have known in the past may in turn become part-time teachers or even retire to private practice. This constant stream will serve to keep in contact the art and science of medicine.—I. I. LEMANN (*Southern Med. J.*, Oct. 1930.)

## Relation of Physiology to Clinical Medicine

Physiology is primarily a study of life. Probably in no other science does the student encounter as many theories as are found in physiology. These theories represent gaps in our knowledge which must be filled in by patient research. It is, therefore, highly important that every physiologist must be an investigator. The problems now confronting the physiologist are largely those concerning the chemistry and the physics of living matter.

In spite of the marvelous development in physiology and the method of teaching the subject there is a considerable and, in some respects, a growing lack of contact between physiology and practical medicine and surgery. The fault can be shared almost equally by the physiologist and the clinician.

In one of the leading medical schools it is customary for the clinical faculty to open its lectures to the junior class by advising the students to forget all that they have learned during the preceding two years since they are now beginning the study of practical medicine. This is no doubt a defense mechanism on the part of the clinician, which leaves him

free to impart his own type of anatomy, physiology and biochemistry. He can use the old tombstone names in anatomy instead of the generally accepted BNA terminology, and his physiology need not be concerned with many developments of the past decade.

In justice to the clinical teachers it should be stated that in practically every medical school there are clinical teachers who keep abreast with the developments in the laboratory sciences and contribute to the sum total of knowledge in the fundamental sciences. In most instances these more alert clinical teachers have devoted a portion of their period training for research in physiology or allied laboratory subjects. The momentum thus attained will in most instances carry them beyond the routine of their everyday practice during the years to come. The investigative spirit, once kindled, will serve as a beacon to broaden their horizon and guide them into new pathways of thought and scientific investigation.—M. H. Rees (*J. A. M. A.*, Sept. 7, 1929.)

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## Teaching of Tuberculosis

The first criticism of the university professors' teaching of tuberculosis is that many of them do not teach it; they do not teach it as the live subject that it is today. What they teach is a cold simulacrum of the modern problem, a plaster cast or death mask of the tuberculosis problem as it looked twenty to fifty years ago.

In too many universities tuberculosis is taught as Latin and Greek or other dead subjects are taught. The students are forced to memorize rules and to memorize unproven, dogmatic statements. The student to whom tuberculosis has been presented as a dead subject will take no other interest in it than to commit to memory such parts of the dry lectures, to which he has been forced to listen, as will enable him to pass his examination and to secure his medical degree or license.

In order to secure for our work a fair share of the brightest of the new graduates, teachers in the universities must revise their lectures and perhaps their own conception of tuberculosis. Then they must make it clear that very little is yet known of the tubercle bacillus and of its devious ways of killing human beings; they must give the students and young physicians the opportunity to form opinions of their own on the many contentious phases of the tuberculosis problem. They must introduce the young men and women to the progeny of the tubercle bacillus, and to the various blood relations of the tubercle bacillus; to the question of the prebacillary and the filterable viruses of tuberculosis; to the problem of a possible relationship between tuberculosis and cancer; to the problem of dissociation. They must tell the truth about the contagiousness of tuberculosis, and do what they can to kill the phthisiophobia that they have unwittingly done so much to spread throughout the world; they must explain enthusiastically to such students as have a special love of surgery the attractiveness of the vista that is now opening before all the men capable of doing lung surgery. The surgically bent students must not only learn to perform the various operations of pulmonary tuberculosis, but they must be convinced of the tremendous importance of lung surgery. They must make it clear to all their students that what the world needs, what it expects, and what every year seems to bring nearer to realization, is a cure or preventive of tuberculosis. They must make it clear to their students that the invitation to become tuberculosis specialists is not confined to men who themselves are tuberculous, or who fear that in some way the dark shadow of tuberculosis has fallen on them or on their families.—S. J. Maher (*British Med. J.*, Oct. 11, 1930.)

## Special or Postgraduate Public Health Training

The prescribed course in bacteriology and immunology in the School of Hygiene of the University of Toronto consists of 250 hours of laboratory work, of which 130 hours are devoted to bacteriology. The exercises in bacteriology and immunology and serology are confined principally to the carrying out of the procedures of a modern diagnostic laboratory with the addition of the preparation of media by the student and the isolation and identification of micro-organisms of diphtheria, pneumonia, tuberculosis, and typhoid. A few of the best students will profit by such a course to a degree which will enable them to take charge of a public health laboratory with little or no additional technical training. The average student will definitely not profit to this extent. The subjects of immunology and serology are presented by a series of practical studies and in classes where the student is himself responsible both for a theoretical discussion and for a working demonstration. Parasitology is of relatively minor importance in Canada. A laboratory course of 30 hours is offered. A laboratory course in public health chemistry of 60 hours is designed to familiarize the student with the chemical methods for the examination of milk, water, and sewage treatment. Lecture and laboratory courses in epidemiology and vital statistics comprise 220 hours; lectures and demonstrations in physiological and industrial hygiene, 65 hours. The time allotted for field work, including attendance at clinics, is 250 hours; sanitation, 30 hours; history of preventive medicine, 10 hours; public health administration and nutrition and dietetics, 42 and 30 hours respectively.

The emphasis on the subjects taught has shifted in a striking manner during recent years in Canada. The time allotted to the study of environmental factors or sanitation has become less, while the personal factors or preventive medicine has received greater emphasis. The emphasis has thus shifted from the study of the influence of the environment to that of the factors concerned in the physiology of the individual—from sanitation to preventive medicine and physiological hygiene. This change has been brought about partly because of the appreciation of the achievements of sanitary engineering and partly because of the success resulting from the application of the knowledge acquired through researches in the fields of infection and immunity, epidemiology, physiology, and nutrition.—D. T. Fraser (*Brit. M. J.*, Oct. 18, 1930).

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## Public Health Course at McGill University

The course in medicine at McGill University is one of five years. In the first year the Department of Public Health and Preventive Medicine has a course of six lectures which serve as a contact with the students, introducing them to the subject of public health and preventive medicine with special reference to personal hygiene. In the second year ten lectures are given on public health organization and administration, including community social organization.

The major course of thirty-five lectures is given in the third year. Ten of these lectures are on mental hygiene, six on industrial hygiene, and eight on the other hygienes. Eight half-days are available for field visits. Of these, two are taken in the laboratory to demonstrate public health bacteriology. As we have found the class-room demonstration to be of great value, through the cooperation of two voluntary health agencies, we have had such demonstrations covering the visiting nurse's visit to the home and a child welfare conference. It is our intention to have more of these demonstrations. There is a written and an oral examination at the end of the third year.

As communicable diseases are a fourth-year subject, we give ten lectures in that

year on the preventive aspect of communicable diseases.

The student is required to make a health study of some area, and to present his report during the first month of his final year. The purpose of this study is to have each student visit some center and see public work health in operation, thus causing him to do some thinking about public health and preventive medicine. In the report of his study, he records the facts as he finds them, discusses them, and makes criticisms and recommendations. The report is reviewed with him individually by one of the staff, and we have found the hour devoted to this review to be most profitable. In the final examination 25 per cent of the marks are given for this study, public health and preventive medicine being one of the final subjects.

The fifth year is a clinical year, and we plan to offer as an option, to a limited number of students, the opportunity for special work in child welfare, mental hygiene, and industrial hygiene as part of their fifth-year work.—A. G. Fleming (*Brit. M. J.*, Oct. 18, 1930.)

## Undergraduate Medical Training in Public Health

There are three major problems in the training of the undergraduate medical student in public health. The first is to provide him with at least a minimum of the factual knowledge which he will require. The second is to show him the field work, and thus, by the visualizing of opportunities, stimulate his interest and enthusiasm to desire and acquire more knowledge. The third is to bring him to understand his responsibility for applying his knowledge for the benefit of those who will look to him as their medical adviser.

Ideally, the preventive aspect of medicine should permeate the whole teaching of medicine. This ideal should be a guiding principle, and it should tend to limit the instruction given under public health and preventive medicine in so far as it is practicable for other departments to deal adequately with the preventive aspect of their particular subject.

The medical student approaches the study of medicine as a subject of diagnosis and treatment; to him the practice of medicine means the care of the sick. Knowing this, it would appear that an early contact should be made by the Department of Public Health and Preventive Medicine with the in-coming student body, and that this contact should be maintained throughout the entire medical course. If this contact is made early, it should at least be possible to convince the student that prevention forms a large part of the practice of medicine, and that if he is to be properly equipped to practice his profession, he must be quite as well qualified to prevent disease as he is to diagnose and treat it.

Particular emphasis may be placed on the fact that there is no sharp line between treatment and prevention, and that proper early treatment is essentially preventive. In the first year the student can be shown the field of preventive medicine. He can be given some idea of its possibilities as applied to the community by organized health departments, and particularly regarding the opportunities in private practice. He should be told how medicine is becoming socialized and how the public demand for health guidance is changing the practice of medicine, in order that he may be prepared for this. Early in his course the student will welcome the subject of personal hygiene because it will enable him to talk intelligently about subjects which are everyday topics of conversation.

In the second year, the student may be introduced to public health organization. Here the approach should be through the relationship of the practitioner of medicine to the health department. The Department of Public Health and Preventive Medicine is responsible for the teaching of public health organization as

such, and the medical student should be shown clearly where he, as a general practitioner, will fit into organized public health work; and his legal and moral obligations in this connection should not be overlooked in his instruction.

In the major course which is given by the department, we must consider what subjects are to be covered and what time should be allocated to each. The subjects which appear to be of major importance are the various hygienes and the communicable diseases. The sanitation about which he needs to know is chiefly rural sanitation, for in cities and towns sanitation is the responsibility of the public authority, whereas, in many rural areas, the public authority is practically nonexistent, and the practitioner must be prepared to give sound advice.

No hard and fast rule is recommended in the allotment of teaching hours for the various subjects, because it is advisable to keep in mind the varying capacity of the teachers. If one teacher is particularly experienced, then it is wise to give him additional time for his subjects, and to use the more thorough teaching on such subjects as a basis for other teaching.

Mental hygiene is part of preventive medicine. The more closely the mental and physical health problems are kept together, the better the student will come to understand that when dealing with any individual from infancy to adult life, he must consider the whole individual, mentally as well as physically.

Communicable disease prevention and control are better dealt with after the student has acquired some clinical knowledge of the communicable diseases, and therefore the proper time for dealing with them depends on when the clinical instruction is given.

In order to make the subject something more than theory, in order to have the student know that the material which he is being taught is actually applied, it is desirable that he should see as much public health work in operation as is practicable. Field visits must be made worth while, or they are a waste of time and minimize the importance of the subject under consideration.—A. G. Fleming (*Brit. M. J.*, Oct. 18, 1930.)

## Careers as Specialists

The term "specialist," though often applied by the public to consulting physicians and surgeons in order to distinguish them from general practitioners, properly belongs to those who confine their practice to special departments, such as ophthalmology, gynecology, laryngology, otology, psychiatry, orthopedics, and radiology. The enormous advances in all branches of medicine, and the skilled technic required, have made specialization most necessary and beneficial, and the conservative disapproval of specialism by the leaders of the profession in the last century is now of interest only as a phase in the history of the healing art. Most of the specialties mentioned above demand skilled technic, but in addition the ever-increasing detail of medicine is splitting practice into a mosaic, so that there is an inevitable tendency for individual consultants to pay particular attention to some one part of the body or group of diseases, such as the heart, nervous system, lungs, the skin, the genito-urinary tract, the rectum, tropical diseases, or even rheumatism and gout. Intensive study, of course, leads to the advance of knowledge, the perfection of technic obtained from constant practice, and the benefit of patients.

Specialism should be superimposed on a wide acquaintance with medicine as a whole, so that in order to avoid a narrow outlook a specialist should know something about every division of the healing art as well as everything about his own subject. It is therefore a mistake to specialize too early; it cannot be begun until after qualification, and should not be attempted until after a resident appointment—house-physician, house-surgeon, or preferably both—at a general

hospital; a resident appointment at a hospital for the special diseases in which he is interested should then follow. In many instances there are special diplomas to be obtained, and preparation for these examinations should now engage the future specialist's attention. In addition, the possession of university degrees of the Fellowship of the Royal College of Surgeons is most desirable.—Sir Humphry Rolleston (*Brit. M. J.*, Oct. 25, 1930.)

## The Teacher a Specialist

In the medical curriculum the student who goes straight through the course spends two years on premedical subjects, physics and biology, two years on anatomy and physiology, with dissecting-room and laboratory work, and three years in clinical studies in the hospitals. It is nearer eight than seven years before a student can qualify, and it is not till he has qualified that he is able to take responsibility and see his life-work from an angle that is far different from that of examinations. The medical student of today had to start his premedical training in the last two years of his school life—when and how can he get the general education on which to base his long years of purely specialist study?

Practically every teacher aspires to be a specialist in one form or another. His research record rather than his teaching ability is the keystone to his appointment. His living interest lies in his special research—his bread and butter is in the heavy burden of routine teaching. When a teacher is placed in charge of a special department it must be his aim and object to further its interests. Naturally he will be proud of the work that is done in his department, and he will not underestimate its importance. He will attend meetings and congresses where he will talk his own particular "shop"; and there will meet others who, like himself, have long come to the conclusion that this particular branch is the one that really matters in the curriculum.

This, stated with some exaggeration, no doubt, is the natural attitude that has come out of the multiplication of specialties, each in its own department, each in its isolated building if it can get one, each with its own journals, and often with its own jargon. And if this man has to outline a section of a course for students, whether of medicine or anything else, he is not likely to minimize the importance of the knowledge that his department can teach, or to give way to other subjects which are of secondary importance in his eyes. Little wonder that the medical curriculum has grown unwieldly, that the course cannot be completed in less than seven to eight years after matriculation, and that a further year is threatened. And withal it is sometimes forgotten that to the medical student the most essential of all studies is the study of man. He can be taught a great deal, but this one thing he has to learn for himself. No teaching, except that of Mother Wit, can give him the wisdom that leads to an understandind of human nature. The student has little chance of developing this essential part of his training, except by contact with his fellows, until he gets into the wards. Yet this is his life's work.—A. E. Barclay, *Lancet*, Dec. 13, 1930.

## Medicine as a Career

Medicine, in the ordinary sense—namely, the supervision and cure of the sick—is not, and probably never will be, an exact science; it is an art aided by the application of several sciences, in which philosophy, religion, and sometimes commercialism also play some part. The degree in which science is applied varies, not only in the hands of different individuals, but in the various branches or departments of medicine; the special branches in which science can be most extensively applied, as in ophthalmology, are for this reason the most satisfactory

to those with a scientific turn of mind. Success in the healing art, unlike success in pure science, does not depend solely on mental ability; it demands the properties of the heart as well as those of the brain. To the abilities of an engineer and chemical expert of the human body, a doctor should add love of his fellow men and some other qualities of a broad-minded churchman. Sympathy requires imagination to see into the minds and understand the anxieties and needs of those who come to be helped and cured; sympathy should not be blunted into callousness by contact with the naked and often repulsive features of poor human nature. Unselfishness, common sense, cheerfulness, reasonable optimism, kindly tact, a good memory, punctuality, and methodical habits, are among the traits and manners that make the real doctor. To be prepared for whatever emergencies may occur in practice demands imagination and foresight; and, though the whims of chance influence the future in ways that to some onlookers may seem very unfair, probably many of those regarded as lucky are so because they are able to turn opportunities as they arise into solid advantages. Good health is obviously important to withstand the strain of continuous hard work, and in their own interest doctors should set an example of personal hygiene, temperance, proper recreation, exercise, and holidays, in spite of the manifold difficulties of their circumstances.

While one, and certainly the commonest, reason for entering a profession is to obtain a livelihood in a reputable manner, this objective can be reached more easily, rapidly, and in greater measure in some form of trade than in medicine. On the other hand, medicine meets a universal demand, and with the expansion and development of medicine and of appointments under the State at home and abroad there are more opportunities and various openings now than ever before. Secondly, apart from illness, accident, or misconduct, every competent qualified man or woman can be fairly certain of gaining a living wage, thus contrasting favorably with other professions, though the great prizes are few as compared with those in Law and the Church. To enter on the "physic line" may be justified as a means of keeping the wolf from the door, but it cannot be recommended as a way to get rich quick, or indeed to get rich at all. It has been estimated that before the war the average income of the medical profession was about 500 pounds a year, and now is about 750 pounds, both gross, so that with the present high cost of living and taxes the position is about the same. This, of course, leaves little margin to save and provide for the time when illness or old age arrests activities. An advantage of public practice —namely, practice for the State, as in the fighting services—is the assured pay and a pension.—Sir Humphry Rolleston (*Brit. M. J.*, Oct. 25, 1930.)

## Medical School of University of Sydney

Candidates for the degree of Bachelor of Medicine and Bachelor of Surgery attend the following courses of instruction: In the first year, botany, including laboratory practice: one term; chemistry (inorganic and organic), including laboratory practice: three terms; zoology, including laboratory practice: fifty lectures and seventy-two hours' laboratory practice. In the second year—anatomy: three terms; dissections: three terms; practical histology: eighty hours; physiology, including laboratory practice: three terms. In the third year—dissections: three terms; anatomy, including applied anatomy: three terms; physiology, including laboratory practice: three terms; pharmacology: one term. In the fourth year,—pathology and bacteriology: three terms, surgery: two terms; operative surgery: one term; medicine: one term; hospital practice, including tutorial surgery, tutorial medicine, clinical surgery, sur-

gical out-patients, daily, including Saturdays: three terms. In the fifth year,—surgery: one term; obstetrics: one term; medicine: two terms; gynecology: thirty lectures; diseases of the skin: ten lectures, with demonstrations; diseases of the ear, nose and throat: ten lectures, with demonstrations; diseases of the eye: ten lectures with demonstrations; therapeutics and materia medica: one term; practical pharmacy: twenty hours; medical jurisprudence: twenty lectures; preventive medicine: fifty lectures; hospital practice, including clinical surgery, clinical medicine: three terms; clinical obstetrics: nine weeks. In the sixth year,—psychiatry: thirty lectures, including demonstrations; medical ethics: three lectures; clinical pathology, in continuous groups: six weeks; clinical biochemistry, in continuous groups: six weeks; hospital practice, including clinical medicine, clinical surgery: daily, one term; clinical obstetrics: refresher course, two weeks. Upon entry to the clinical school at the commencement of the fourth year of the curriculum the students are arranged into groups and these groups in rotation attend all of the courses of practical instruction according to a time table which varies somewhat in the different hospitals. —*Med. J. of Australia,* Oct. 25, 1930.

## Medical School of the University of Melbourne

Candidates for the degree of Doctor of Medicine must be Bachelors of Medicine of at least two years' standing and subsequent to passing the qualifying examination must have attended twelve weeks at a hospiital for the insane. The subjects of the examination are medicine, including medical opthalmology, and one of the following: Obstetrics and medical gynecology, diseases of children, diseases of nervous system, preventive medicine. If a thesis be presented and be passed by special examination, the candidate must pass in clinical medicine. Should a thesis of outstanding merit be submitted, the Faculty, by special permission, may consider this sufficient. An M. D. degree by this method has not as yet been awarded. A thesis to be successful must be a definite contribution to knowledge, the outcome of original investigation and not be merely descriptive.—*Med. J. of Australia,* Oct. 25, 1930.

## Medical School of the University of Adelaide

The course lasts for six academic years. During the first year the student must attend lectures and practical work in the following subjects: (a) physics, (b) chemistry, (c) botany (during first term only), (d) zoology. Second year: A course of lectures and demonstrations in anatomy and dissect during the whole academic year, in histology, neurology and embryology, in biochemistry during the first and second terms, in physiology during the third term. Third year: A course of lectures in anatomy and dissect during the whole academic year; in physiology and in pharmacology, in practical pharmacy during a period of three months. Fourth year: A course of lectures in the principles and practice of medicine; in the principles and practice of surgery; during the whole of the hospital clinical year, courses of lectures in clinical medicine and clinical surgery; lectures in therapeutics, including materia medica and posology; in medical zoology and in pathology and bacteriology, in public health and preventive medicine; in applied physiology. He must attend the medical and surgical practice of the Adelaide Hospital in the wards and in the outpatient department during the whole hospital clinical year; attend the tutorial classes in medicine and in surgery during the first six weeks of the hospital year; hold the office of surgical dresser during the first two terms of the clinical year and the office of medical clerk during the

third term; attend a course of instruction at the department of dentistry; attend at least forty postmortem examinations; examine pathological material derived from inpatients; after clinical attendances at the Adelaide Hospital have been completed, three weeks' tutorial instruction at the Queen's Home. During the fifth year the student attends a course of lectures in the principles and practice of medicine, in the principles and practice of surgery, lectures in clinical medicine and clinical surgery; demonstrations in regional and surgical anatomy and in operative surgery; complete the course of instruction in pathology; lectures in obstetrics and gynecology, three weeks in residence at the Queen's Home. During the whole hospital clinical year he attends medical and surgical practice in the wards and outpatient department; holds the office of medical clerk during the first two terms of the clinical year and the office of surgical dresser during the third term; examines pathological material derived from inpatients; attends at least forty postmortem examinations; completes a course of twelve attendances each at the venereal clinic and at the isolation department of the Adelaide Hospital. During the sixth year he attends during the whole hospital clinical year courses of lectures in clinical medicine and clinical surgery; courses of lectures in forensic medicine, in psychological medicine and in diseases of the eye and of the ear, nose and throat; courses of clinical lectures in medical and surgical diseases of children; the medical and surgical practice in the outpatient department during the whole hospital clinical year; holds for twelve weeks the office of medical clerk and surgical dresser in the gynecological wards and outpatient department; eleven weeks eye clinic, two days a week, and the ear, nose and throat clinic, one day a week. He holds for six weeks each the office of medical clerk and of surgical dresser in the wards and outpatient department of the children's hospital; examines pathological material derived from inpatients and outpatients at two hospitals. He also attends refresher course of three weeks at the Queen's Home, a course of instruction at the Adelaide or the Adelaide Children's Hospital in the administration of anesthetics by some person approved by the Council; a course of lectures in medical ethics, attends ten sessions in the dermatological department.—*Med. J. of Australia*, Oct. 25, 1930.

## The Jewish Medical Student

The claims of discrimination against the Jewish applicant for admission to medical school are reviewed and discussed by Dr. Harold Rypins, secretary New York State Board of Medical Examiners in The American Hebrew, Dec. 26, 1930, p. 181.

Basing his statement on definite data, which are presented he says at the outset: First, there is no evidence of racial or religious discrimination in the admission of applicants to medical schools, either generally throughout the country or particularly in New York City; second, because of the peculiar distribution of the Jews, the case of Jewish students in New York City seeking admission to the study of medicine presents a special problem deserving special consideration, the solution of which will be hindered rather than advanced by unfounded claims of racial or religious prejudices.

It is obvious that admission to a medical school in this country is a matter of competitive elimination which operates equally against Jews and non-Jews. In spite of this fact, 17 per cent of all the medical students in the country are Jewish. Since the Jews form only 3½ per cent of the total population of the country, the fact that they are selected to fill 17 per cent of the openings in medical schools throughout the country is the best evidence against the allegation of religious discrimination.

The medical schools of New York City have 525 openings for freshmen or 18.7 per cent of all the openings in American medical schools, although the population of New York City is only 5.7 per cent of the total population of the country.

The total number of applications received last year for admission to medical schools in New York City was 4,789 of which 3,640 or 76 per cent were from Jews.

Of the total 4,789 applications, only 524, or 9.13 per cent, were admitted, of whom 226, or over 43 per cent were Jewish. Since the Jews form less than 30 per cent of the total population of New York City, the fact that over 43 per cent of all the freshmen admitted to medical schools in New York City were Jewish is the best possible evidence of the absence of racial or religious prejudice in the selection of candidates for admission to medical schools in Greater New York.

Since the distribution of medical schools parallels the distribution of the general population of the country, while the distribution of the Jews does not parallel these two, but on the contrary, is concentrated intensively in New York City, it is apparent that the normal expectation of the Jewish applicant for medical education in New York City necessarily deviates from all other cases.

When it is further considered not only that the percentage of Jews entering all professions is higher than normal, but that the percentage of Jews desiring to enter medicine is higher than those desiring admission to the other professions, it is clear that the disproportionately large number of Jewish students who are disappointed in securing admission to the study of medicine is largely the result of the peculiar concentration of the Jewish population in Greater New York and not, as has been alleged on occasion, the result of religious and racial discrimination.

Furthermore, it can not be denied that while the medical schools in New York City welcome applicants from a distance, medical schools outside of New York City are peculiarly sceptical about New York City applications on the theory that the local schools will have taken the choicest candidates. For example, a typical medical school at a distance from New York City last year accepted nine Jewish students or 18.6 per cent of 52 freshmen, although of 669 applicants, 418 or 62 per cent were from Jewish students. Most of these rejected were Jewish applicants from New York City who were assumed to be inferior for the reason that they could not obtain admission to a medical school in their own community.

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## Instruction in Professional Ethics

Of the 67 schools answering a questionnaire, 43 per cent reported definite courses in this subject; 28 per cent reported specific attention to it in other courses; 9 per cent indicated that it receives incidental consideration in all courses, and 20 per cent reported no instruction in the subject. Ninety-three per cent of the definite courses are required of all students. They are usually given during the last year of training, but are offered occasionally as early as the first year. The distinct courses differ considerably in length and character. They vary from a few occasional lectures given at the convenience of the students and visiting lecturers to standard courses given at regular hours by regular members of the faculty. Frequently the instruction in professional ethics is combined with such subjects as history of medicine or medical economics and jurisprudence. As in the field of law, those members of the medical profession who believe in the value of systematic ethical instruction support their convictions by aggressive propaganda and sometimes by the endowment of lectureships in the subject. In 1925 Dr. George Washington Gay gave Tufts College

$1,000 to establish such a lectureship. The Council on Medical Education and Hospitals of the American Medical Association has recently made a determined effort to persuade medical schools to include a definite course in professional ethics in their curricula. At a meeting of the Board of Trustees of the Association in November, 1926, a recommendation was adopted expressing the hope that the Council would "undertake to have lectures on medical ethics made a part of the curriculum in every approved medical school." At a business meeting of the Council on February 13, 1927, a report was unanimously adopted, and was subsequently quoted in a letter sent by the Council to all deans of medical schools. The Council suggests that the subjects of medical economics, medical jurisprudence, medical history and perhaps also, in some instances, pastoral medicine might be conveniently grouped with that of medical ethics under the general title of the "Social Relations of the Physician." (*Research Bull. Nat'l Educ. Assn.*, January, 1931, p. 17).

## The Federation of State Medical Boards and the Association of American Medical Colleges

In his President's Address, delivered at the annual meeting of the Federation of State Medical Boards held in Chicago, February 17 and 18, 1931, Dr. C. B. Pinkham, secretary of the Board of Medical Examiners of the State of California, said:

Experience has taught the undesirable inelasticity resulting from incorporating fixed standards of medical education in any medical practice act. Each year witnesses new developments in methods of medical teaching that necessitate many rearrangements of the curricula of medical schools. This Congress offers a forum where enthusiastic teachers in medical schools may submit new ideas in medical education. Each medical school, while free to follow its own line of endeavor and to develop new theories, both in curricula and in methods of instruction, must co-relate its program with that of the Association of American Medical Colleges and with the Federation of State Medical Boards of the United States. Untrammeled by legislation, the Association of American Medical Colleges can journey in the realm of medical education as fancy dictates, with only an occasional medical practice act to disturb the equanimity of the adopted curriculum.

Although the majority of medical schools of today are affiliated with or a part of universities that have adequate machinery for scrutiny of the entire educational course of their medical graduates, it still is necessary that the medical examining board be alert in its consideration of credentials, particularly when concerned with those from foreign professional schools.

The medical examining boards are the stabilizers that determine the acceptability of the medical school graduate as adequately prepared for the proper care of the sick and afflicted. They maintain a balance between over-standardization and inadequate medical education. Their function of determining the qualifications of applicants for a license to practice any system of the healing art must not be upset by ill-timed legislation that seeks to exempt from state board examinations graduates of class A schools, lest by means of writ of mandate the product of the low grade school secure the same privilege. All of us know that adequate medical teaching cannot be gauged solely by success in passing a state board examination.

This Federation at our 1929 annual session wisely incorporated in its by-laws recognition of the Association of American Medical Colleges as the standardizing agency in matters pertaining to all courses of medical study. Thus have we expressed full confidence that the Asso-

ciation of American Medical Colleges will develop the necessary supervisorial machinery for such study, creation and direction of mutually acceptable standards of professional education as will guarantee that each medical school in membership will cooperate by following the adopted education program. (*Federation Bull.*, Feb., 1931).

## The Clinic as a Center of Graduate Study

Postgraduate instruction should commence with the physician's graduation from the medical school. It should continue throughout his life. In my judgment the most potent postgraduate clinical instruction in the early period of the medical man's life is afforded by the internship and residentship in a well organized, efficiently run hospital. The medical school curriculum of today really is planned as a preparation for a hospital service.

The most important influence of teachers in the clinical branches of medicine is not exerted within the medical school on medical students but within the clinic or hospital on recent graduates in medicine. The clinician's pupils or disciples are not the large body of his medical students but the small group of his interns or house officers and his residents. To these he imparts the discipline of his leadership. These he conducts in their learning. In the sense of graduate instruction in a university, the resident group form the clinician's seminar.

Such a relationship is possible only in a clinic organized with a chief of service giving largely of his time and effort to the conduct of the clinic and at heart a teacher and investigator, in a clinic adequately staffed, provided with necessary laboratories capable of more than routine examinations, and peopled by not too many patients. The latter is important. The majority of American hospitals have too many patients in ratio to staff, and particularly in ratio to resident staff, for them to be significant centers for graduate study. No hospital will attain to the level of a genuine graduate school in clinical branches of medicine, unless it has enough patients to afford numerous examples of disease of many types and enough members of the resident staff, so that each patient may be studied thoroughly and not too hurriedly by one or several of them.

A distinction needs to be made between the graduate study of a clinical branch of medicine and an apprenticeship in one of them. The latter is more analogous to what is known in medical circles as postgraduate study. That there is such a difference seems largely to be lost sight of at present.

Hospitals in general can easily make of the intern a safe practitioner of average ability if they train him as an apprentice needs to be trained; to do more requires the leadership of men able far beyond the level of the average practitioner and able in different directions. It is the clinic of the latter type, presided over by the real leader, that is the outstanding need of today.

If there is to be any official standardization of hospitals, new standards should be set. At present far too many hospitals are rated as satisfactory, that is, are class A hospitals, for such a rating to have much value or to be any real stimulus to improvement.

In my opinion the fundamental standard demanded of the majority of the hospitals should be that the particular hospital in question be a safe place in which to be a patient. For this it is primarily required that the hospital have the usual modern equipment and that every staff member be a well trained practitioner. The latter is far more important than the former.

All hospitals that are safe places to be sick in within the terms just outlined can be considered satisfactory for an apprenticeship in medicine, i.e., may be rated as being suitable for internship,

provided the staff is willing to devote time to the instruction of interns. In this connection, consideration must be given to what the intern receives in the way of training. The staff must be one that makes a serious effort to train interns. This means, among other things, that the staff members spend a considerable time in the actual examination and discussion of the patients. In many hospitals this is not done, and as a result the intern receives but little guidance and finishes his service without having learned very much.

It is by no means necessary that a teaching hospital have any association with a medical school. In fact, numerous hospitals in actual association with medical schools are not what I would regard as teaching hospitals. Any hospital may become a teaching hospital when members of the staff follow the general methods applied in graduate instruction in university departments of science and literature. In a teaching hospital there should be a resident staff of several grades, interns or house officers, assistant residents and residents. The resident staff forms the student body with interns as apprentices and assistant residents and residents as graduate students, the latter having considerable free time to carry on investigation.

During the apprenticeship period the service may be a mixed one, though in general a mixed service of any sort with less than a two years' duration affords a definitely unsatisfactory apprenticeship leading to graduate instruction, because a shorter service offers too little time to acquire the routine technic of any one subdivision of the service and may result in the intern's becoming a slipshod apprentice. In general, present mixed services are unsatisfactory from a pedagogic aspect and not satisfactory as concerns the care of patients.

As in any other scheme of graduate instruction, leadership is far more important than material facilities, and it is in real leadership that our clinics are weakest. In a teaching clinic the leadership of the chief of service looms large in the success of the clinic in graduate instruction.—H. A. CHRISTIAN, *J.A.M.A.*, March 28, 1931, p 991.

## Mental Health as a National Problem

The mental health of a nation is its greatest asset. Mental hygiene is a vital part of preventive medicine.

1. Medical students and physicians need more adequate training in psychiatry.

2. There should be interns in every hospital for the care of the insane. The presence of the inquiring student would do more to advance pathology, increase autopsies and develop research in our mental hospitals than any other factor.

3. More of the research energy of the medical profession should be diverted into the difficult fields of psychology and psychiatry.

4. Education of the public so that they will view mental diseases as they do other diseases is important.

5. The handling and care of the mentally ill should be dealt with along medical rather than legal lines.—RAY LYMAN WILBUR (J.A.M.A., March 28, 1931, p. 994).